The International Association of Sedimentologists 
and 
Sapienza University of ROME 
invite you on 10-13 SEPTEMBER 2019 for the 

34th IAS Meeting of Sedimentology 
“Sedimentology to face societal challenges on risk, resources and record of the past” 
Rome, September 10th-13th 2019 

Second Circular 
Scientific Program and Call for abstract 

www.IASroma2019.org 
IASroma2019@uniroma1.it 
34th IAS
DATES

<table>
<thead>
<tr>
<th>Date</th>
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<tr>
<td>15 August 2018</td>
<td>1st Circular and call for sessions</td>
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<tr>
<td>31 October 2018</td>
<td>Call for sessions deadline</td>
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<td>15 January 2019</td>
<td>2nd circular and early bird registration opens</td>
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<tr>
<td>30 March 2019</td>
<td>Abstract submission deadline</td>
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<tr>
<td>15 May 2019</td>
<td>Abstract acceptance (notification to author)</td>
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<td>30 May 2019</td>
<td>Early bird registration deadline (needed for presenters).</td>
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<td>1st June 2019</td>
<td>Regular registration open</td>
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<td>15 June 2019</td>
<td>3rd circular (program)</td>
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<td>15 August 2019</td>
<td>Regular registration deadline</td>
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CONFERENCE CALENDAR

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<th>Date</th>
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<tr>
<td>Monday 9 September</td>
<td>Icebreaker at Botanical garden in Trastevere</td>
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<tr>
<td>Tuesday 10 September</td>
<td>Opening and Scientific Sessions</td>
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<td>Wednesday 11 September</td>
<td>Scientific Sessions</td>
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<tr>
<td>Thursday 12 September</td>
<td>Intra-Congress field trip, ½ day workshops and Conference Dinner</td>
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<td>Friday 13 September</td>
<td>Scientific Sessions and closing</td>
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REGISTRATION FEES

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<tr>
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<th>IAS</th>
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<tr>
<td>Student and retired IAS member - Early Registration</td>
<td>200€</td>
<td>250€</td>
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<td>Student and retired IAS member - Regular Registration</td>
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<td>Student and retired IAS member - on site Registration</td>
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|                                |         |         |
| Delegate Early Registrations   | 350 €   | 450 €   |
| Delegate Regular Registrations | 450 €   | 550 €   |
| Delegate on site Registrations | 600 €   | 650 €   |

|                                |         |         |
| One day Registration           | 300€    |         |
| Exhibition                     | Contact us |         |
| Accompanying                  | 100€    |         |
| Icebreaker                     | 30€     |         |
| Conference dinner             | 90€     |         |

A cancellation fee of 80% of registration costs will be applied for cancellations received before end of May, of 50% between June and end of July. No refund will be issued for cancellations received after the 1st of August 2019.

IAS Student Members can apply for travel grants: www.sedimentologists.org
CALL FOR ABSTRACT

The IAS Rome 2019 Organising Committee invites the submission of abstracts of original work for consideration as an oral or poster presentation. All presenting authors must be paid registrants at the Conference. Contributions to all sedimentological and related topics are welcome. The organizing committee proposes some 58 sessions belonging to 11 Meeting themes. We realize that the number of sessions is very high, but we left the opportunity to all the scientific communities to propose a subject. Then the selection will be made on the number of abstracts received. Sessions not reaching the minimum number of abstracts will be deleted and abstract moved to similar session. Plenary sessions with keynote lectures of general interest are planned.

The abstract should be limited to 500 words; the title should be at most 15 words. Plain text should be used without any special characters. Figures are not allowed.

For abstract submission authors should suggest their preferred mode of presentation (oral or poster) but the ultimate possibility of oral presentation will be decided by the organizing committee and session’s convener(s). The author may select the scientific session he prefers but the presentation could be moved by organizing committee if the session will be cancelled.

For Registration and Abstract Submission: https://iasroma2019.exordo.com

The contribution will only be included in the book of abstracts and in the program if the presenting author has paid his/her registration by the early bird registration deadline (end of May 2019). The contribution will be removed from the program if the presenting author is not present at the conference. Each participant can be presenting author of only oral presentation and one poster or of two posters (the oral presentation can be moved to poster by the organizing committee and session’s convener(s), according to reviewing process); this rule might have justified exceptions (e.g., keynote lectures). You can change the presenting author at short notice in case of unforeseen absence from the conference.

All contributions which presenting author is registered as student will automatically participate in the best student presentation program.
Meeting theme 1 - Carbonate platforms and reefs

1.1 Carbonate producers and Cenozoic platforms
D. Basso, V. Bracchi, G. Coletti

1.2 Open Session on Carbonates & bioclasts
S. Lohmeier, L. Tomaselli

1.3 Understanding carbonate factories through palaeoenvironmental and geochemical signals
M. V. Guillem, M. Brandano, I. I. Baceta

1.4 The carbonate platform record of extreme palaeoenvironmental events
M. Parente, S. Amadio, H. Weissert

1.5 3D modelling of carbonates: techniques and applications at different scales and processes
L. Tomaselli, M. Franceschi, R. Baldenai, S. Tomàs, J. Kenter

Meeting theme 2 - Coastlines and deltas

2.1 Estuarine systems: from morphodynamics to stratigraphy
A. D'Alpaos, M. Ghinassi

2.2 Along-strain variability in modern and ancient coastal and shelfal depositional environments
M. Poyatos More, E. Schwarz, A. Amorosi and J. Bhattacharya

2.3 Aeolian sediments and coastal systems
L. Clemenzen and R. Pau

Meeting theme 3 - Shallow-water depositional systems

3.1 Mesotemperate continental margins: new approaches to an old paradigm
D. Petrasch, D. Baitalot, P. Bontognali

3.2 Human impact on fluvial and estuarine depositional systems

3.3 Geochemical insights on deposition and early diagenesis of modern carbonates
P. Sward, C. Pederson, M. Sánchez-Román

3.4 Interplays of hydrodynamic processes in shallow marine environments
R. Vuchet, M. Guigliotta

Meeting theme 4 - Deep-marine depositional systems

4.1 Deep-water channels: Morphology, architecture, flow processes and sedimentation
C. Gomp, T. Mulling, M. Rubesco, M. Cartigny, M. Heijne, P. Hu

4.2 Linking deep water depositional processes, facies and stratigraphy
J. Lang, J. J. Fedele, D. C. Hoyos, R. Tinteri, T. M. Demko, F. Gamberi

Meeting theme 5 - Continental environments

5.1 Non-marine carbonates: from the geological record to present-day processes in continental settings
G. Della Porta, E. Capezzuoli, M. R. Rossi, E. Taglialamchi

5.2 Palaeosols: a treasure chest to understand the sedimentary processes in continental realm
G. Bussi, M. Benvenuti, S. Caricchi, I. Cojan, A. Marconato, M. S. Ragambom, A. Varela

5.3 Modern lakes and lacustrine sediments as archives of geological environmental change and anthropogenic impact
M. Marchegiano, D. Cosentino, E. Glizio, D. Ariztiguí, L. Sabodi

5.4 Cave sediments and palaeoclimatic
L. Sanna, A. Colombo

5.5 New advances in Lacustrine sedimentology
P. Wei, H. Liu, S. Pan, C. Zavala

5.6 Sedimentary processes, stratigraphic architecture and stratigraphy of alluvial systems
M. Ghinassi, L. Colombera, K. Fielding, M. Mancini

Meeting theme 6 - Cyclism in sedimentary record

6.1 Stratigraphic controls on the geochronological and fossil record
S. Daniele, E. Jarochowska, R. Coimbra

6.2 Technological and conceptual advances in sequence stratigraphy.
New achievements and open questions
D. Ridente, B. U. Haq, C. Gorini, A. Viana

Meeting theme 7 - Sedimentary Processes (including volcanic and planetary)

7.1 Italian sedimentology in the world, world sedimentology in Italy: contribution to knowledge advancement
M. Brandano, E. Capezzuoli, M. Tropeano, D. Ruberti, D. Chiarelli, M. Pedelei

7.2 Marine microbials: a record of bio-sedimentary processes through time

7.3 Life and sediment: biotic influences on clastic sedimentary processes, landforms and the stratigraphic record
W. McMahon, H. J. Pierik, N. S. Davies, M. G. Kleinhaus

7.4 When volcanoes meet the environment
A. De Capua, G. Kereszturi

7.5 Super-eruptionary processes and open flow-regime bedforms
R. Enghelt, P. Dietrich, A. Normandieu, A. Strootman, D. Casalbore, M. Cartigny

7.6 The sedimentary record of past glaciations, from Palaeozoic to Present
J. Knight

7.7 Sedimentary processes on high-latitude continental margins

7.8 Integrated approaches to the recognition of contourite depositional systems
M. Rebesco, E. Martorelli, D. van Royo, J. Hernandez-Molina, G. Davoli

7.9 Modern and ancient straits and seaways: towards a universal model for their sedimentary dynamics
S. G. Longhitano, F. J. Chiocci, V. M. Rossi, D. Chiarella, N. Calgatay, G. Necita

7.10 Subaqueous mass movements and their consequences: from scientific knowledge to geohazard assessment
D. Casalbore, L. Moscardelli, M. Clare, D. Casai, P. L. Chiocci

7.11 The sedimentary record of earthquakes, tsunamis, and other extreme/catastrophic events
M. Moretti, J. Knight, G. Mastronuzzi, A. Vött

7.12 Sedimentary processes and biofauces: implications for palaeoclimate, climate and astrobiology
M. Pondrelli, B. Cavazza, L. Maringangeli

7.13 Domino effects in sedimentology – from process to product to process to product to...
H. van der Veij, S. Hage, M. Azpiroz Zabaleta, S. Aclikalin, S. Girardclous

7.14 Planetary Sedimentary Geology: from remote sensing and in-situ datasets, numerical modelling, experiments and terrestrial analogues
F. Salse, W. McMahon, M. Kleinhaus, N. Manold

7.15 Evaporites on Earth and beyond
S. Lugi, M. Bavel, V. Man0l

Meeting theme 8 - Paleo-geography and environmental evolutions

8.1 Ichnology, trace fossils and depositional environmental evolution
P. Rodriguez-Tovar, A. Veccei

8.2 Records of the past: Distinguishing natural from human-signatures in sediment archives
P. Roesser, J. Kaiser, M. Cymricz, M. Thieuera

Meeting theme 9 - Source-to-Sink studies

9.1 From sediment generation to sediment routing systems
L. Caramori, L. Andr, D. Chew, A. Rosentini

9.2 Arterial petrology for unravelling hinterland and offshore palaeogeography. A tribute to Gian Gaspare Zuffa

Meeting theme 10 - Applied sedimentology

10.1 Anthropocene: a living and critical issue in Earth Science and Society
S. Capaccioli, V. Fascetti, M. R. Gibling

10.2 Archaeological sedimentology: a highway through interactions between past human societies and their environment
J. Curie

10.3 Evolution of coastal and alluvial plains: a key to understand subsidence and aquifer hazards
D. Ruberti, M. Sacchi, O. Sztan

10.4 Goodvictory, geohazard and geotourism
L. Erikstad, P. Glanville, L. Sabato

10.5 Sedimentology and sedimentary geology applied to site effects evaluation at ground surface: advances and future perspectives
I. Gaudoni, G. Romagnoli

10.6 Stratigraphic and Sedimentological Evidence of Past Earthquakes
F. Livio, F. Ferrari, S. Gori, E. Falsuvcci

10.7 Managing coastal sediments
S. Capaccioli, E. Antony, E. Pranzini, S. De Jonge, G. Fontolanz, P. Sulpice

Meeting theme 11 - Sedimentology and Hydrocarbons

11.1 Sedimentological, stratigraphic and geomorphic record of the evolution of Tethys ocean related basins
A. Al Langwai, R. Al-Douzi, D. Ahmad Khan, M. Al-Masrafa

11.2 New concepts and tools to unravel depositional architecture in deforming basins: from seismic stratigraphy to analogue models
A. Argnani, F. Gamberi, M. Rossi, A. Madeo

11.3 Sedimentology at reservoir-scale: recent improvements and way forward
F. Bigoni, O. Borromeo, M. Catanazzo, G. Davoli

11.4 Siliciclastic-carbonate and other mixed deposits: sedimentology and reservoir properties
D. Chiarella, L. Moscardelli, M. Tropeano

11.5 New frontiers in mudrock sedimentology and stratigraphy
G. Gambonelli, J. Schieber

11.6 Recent advances in carbonate diagenesis studies: analytical challenges and application to case histories
M. Gasparini, T. Gabellone, C. M. John

11.7 Seismic Geomorphology and Sedimentology: Improvements and Applications
H. Zeng, X. Zhu

11.8 Sedimentary heterogeneity controls on fluid flow in hydrocarbon reservoirs
S. Medici, L. Colombera, N. Yan, M. Marin, N. Mountney

11.9 Organic matter in palaeoenvironmental, palaeoecological and hydrocarbon exploration research: progress and perspectives
L. Tommasi, R. Pau

11.10 Methane-rich fluid expulsion processes and their signatures in marine sediments
D. Fontana, R. Capozzi, J. Knies, G. Panieri

We expect the final number of sessions to be half up to two-thirds of the list above, as the requested minimum number of abstracts will not be reached by all the sessions.
SESSION DESCRIPTION AND CONVENER(S)

1.1 Carbonate producers and Cenozoic platforms

Daniela Basso - daniela.basso@unimi.it; Valentina Bracchi; Giovanni Coletti
(Univ. Milano - Bicocca, Dept. of Earth and Environmental Sciences, Italy)

Carbonate depositional systems record changes in architecture, geometry, texture, lithofacies, and biogenic components through time. Carbonate producers are living organisms with precise energetic and environmental requirements, therefore climatic and oceanographic variations, driven by geology, exert a strong influence over them. This is especially true for neritic systems located at the boundary between the tropical and temperate realms, which are very sensitive to climate belts dynamics through geological time and to sea-level oscillations. The Earth went through major environmental revolutions during the Cenozoic, shifting from a “greenhouse” to an “icehouse” world and witnessing dramatic oceanographic events. Several global changes affected the functioning and the relative dominance of the major carbonate factories (coral reefs, large benthic foraminifera banks, rhodolith beds and algal build-ups) that recorded in detail the temporal and spatial variation of these events. Unveiling this natural archive is of paramount importance for understanding and modelling the future of our planet under the expected consequences of the ongoing climate change. This session aims at offering an overview of the Cenozoic environmental evolution of our planet by presenting a series of case histories from a suite of diverse carbonate factories, geological contexts and time, to depict their inception, evolution and demise.

1.2 Open Session on Carbonates & Bioconstructions

Stephen Lokier - s.lokier@bangor.ac.uk (Bangor University, UK); Laura Tomassetti (Earth Science Department, Sapienza University of Rome, Italy)

This Open Session invites contributions from general and interdisciplinary topics within the diverse fields of Carbonates (marine and continental) and Bioconstructions. The session provides an opportunity to present studies that do not sit comfortably within any of the research topics covered by the special themes.

1.3 Understanding carbonate factories through palaeoecological and geochemical signals

Guillem Mateu-Vicens - guillem.mateu@uib.es (Dept. of Biology, University of the Balearic Islands, Palma de Mallorca, Spain); Marco Brandano (Earth Science Department, Sapienza University of Rome, Italy); Juan Ignacio Baceta (Department of Stratigraphy and Palaeontology, The University of the Basque Country, Spain)

Carbonate factories are possibly dependent by many environmental factors such as carbonate saturation, biological metabolism, biologically-controlled and -induced carbonate precipitation, loci of accumulation and preservation. How the conditions for a carbonate factory efficiency can be achieved and how the conditions have varied with evolutionary history, atmosphere and ocean chemistry, tectonic plate configurations, paleoclimate, and other factors will be discussed in the session. Contributions and case histories dealing on facies and geochemical characterization of carbonate factories from Paleozoic to Modern carbonate platforms are welcome.

1.4 The carbonate platform record of extreme palaeoenvironmental events

Mariano Parente - maparent@unina.it (University of Naples Federico II, Italy); Sabrina Amadio (University of Naples Parthenope, Italy); Helmut Weissert (ETH Zürich, Switzerland)

Shallow-water carbonate platforms provide unique windows to Earth’s geological past. These environments document the response of neritic biocalcifiers to severe perturbations of biogeochemical cycles and host a precious record of carbonate-associated proxies of past ocean conditions. In this session we invite contributions that employ traditional and novel approaches to decipher the palaeoenvironmental archive of shallow-water carbonates. Within this broad topic, contributions dealing with stratigraphic intervals encompassing extreme events, like the end-Permian, end-Triassic and end-Cretaceous events, the Mesozoic OAEsand the Cenozoic hyperthermals are particularly encouraged.

1.5 3D modelling of carbonates: techniques and applications at different scales and processes

L. Tomassetti - laura.tomassetti@unironal.it (Earth Science Department, Sapienza University of Rome, Italy); M. Franceschi (Department of Geoscience, University of Padua, Italy); B. Bádenas (Department of Earth Science, University of Zaragoza, Spain); S. Tomáš (Institute of Geoscience, University of Potsdam, Germany); J. Kenter (Total, France)

3D modelling holds great potential for the quantitative study of carbonates at different scales and its application ranges, for example, from volume assessment, calculation of growth rates and distribution of facies and heterogeneities to forward modelling of sedimentation and diagenetic processes. Several methods (e.g. seismic, photogrammetry, LiDAR, drone and hyperspectral imaging, CT scanning) provide an invaluable and increasingly accessible source of three-dimensional information and software for data management and interpretation is becoming increasingly sophisticated. However, integration of datasets through efficient workflows as well as adequate data-sharing platforms and standardization of formats are still underdeveloped. This session seeks contributions of 3D modelling examples across different scales and within the broad field of carbonate sedimentology to capture the range of applications, the current state of the art on workflows including those for sharing data sets and, finally, stimulate discussion on synergies and new directions to improve the understanding of carbonate sedimentary systems.

2.1 Estuarine systems: from morphodynamics to stratigraphy

Massimiliano Ghinnasi - massimiliano.ghinnasi@unipd.it; O’Alpaos Andrea (Department of Geosciences, University of Padua, Italy)

Estuaries are delicate coastal environments, which evolve under the intertwined effect of hydrological, chemical and biological processes. In the past, the complex interaction among these processes promoted the accumulation of thick sedimentary successions, which can be of relevant economic importance (i.e. hydrocarbon reservoirs). Today, the morphodynamics of coastal environments occurs under the influence of rapid climate changes and anthropogenic pressures, which make imminent evolution of estuarine systems poorly predictable. Understanding estuarine morphodynamics and related deposits has therefore remarkable social and economic implications, both in terms of landscape management and subsurface exploration. Exploiting the up-to-date knowledge about estuarine morphodynamics, this session aims at reconciling results from field studies, mathematical modelling and laboratory investigations in order to discuss: i) principles to investigate estuarine sedimentary products; ii) models to predict evolution of estuarine systems. This session aims at bringing together researchers working on modern geomorphology and ancient deposits, as well as researchers undertaking physical and numerical modelling approaches. Presentations are welcome on all aspects of estuarine systems: hydrology, hydromorphodynamics, morphological characterisation, morphodynamics, sediment transport, stratigraphy, impact of climate change and sea-level rise.

2.2 Along-strike variability in modern and ancient coastal and shelfal depositional environments

Miquel Poyatos Moré - m.p.more@geo.uio.no (Department of Geosciences, University of Oslo, Norway); Ernesto Schwarz (Centro de Investigaciones Geológicas, Universidad Nacional de La Plata–CONICET, Argentina); Alessandro Amorosi (Department of Biological, Geological and Environmental Sciences, University of Bologna, Italy); Janok Bhattacharya (School of Geography and Earth Sciences, McMaster University, Canada)

Basin margin development and the timing of sediment transport to the oceans are strongly influenced by the position and character of paralic systems relative to the changing physiography of the coastline, and the relative dominance of depositional processes occurring along its adjacent shelf. Here, the dynamic interaction of numerous factors results in a complex heterogeneity of nearshore deposits, observable both in modern, ancient and high-resolution seismic datasets. This complexity has been
generally well studied along depositional dip profiles, but the lateral (along-strike) variability of sedimentary systems from the shoreline to the shelf is less understood, possibly due to the difficulty in recognizing sub-seismic lateral facies changes, and the absence of well-documented large-scale outcrop examples. Consequently, the lateral variability of nearshore sedimentary systems and its resulting complex stratigraphic expression are still poorly constrained.

In this session we invite contributions from both modern and ancient studies of coastal to shelfal depositional environments, which might help improving our understanding about the complex interaction between numerous factors in this segment of source-to-sink systems. The session aims to integrate detailed studies of internal bed-scale facies architecture with larger-scale plan-view analysis, tracking along-strike geomorphological changes and controls in the resulting laterally-variable stratigraphic record of these system.

### 2.3 Aeolian sediments and coastal systems

Lars Clemmensen - lars@ign.ku.dk (University of Copenhagen) and Ken Pye (Kenneth Pye Associates Ltd., Reading, UK).

The session would cover both modern and ancient environments. It would be timely to have papers looking at the linkages between climate (including windiness) and sea level change, aeolian sedimentation, dune mobility and stabilization phases, including carbonate-rich dunes (aeolianites), silicilastic dunes and paleosol sequences.

### 3.1 Penecontemporaneous dolomite: new approaches to an old conundrum

Daniel Petrasch - petrasch@ualberta.ca (Czech Geological Survey, Czech Republic); Or Biilik (University of Haifa, Israel); Tomasos Bontognali (ETH-Zürich, Switzerland).

Penecontemporaneous dolomites are known to have formed a few decimeters below the surface since the Precambrian. Their occurrence in moderate amounts is not rare in Holocene evaporitic settings connected to the sea, where it is relatively easy to account for all the ingredients required for the theoretical formation of large amounts of dolomite. Yet, their precipitation mechanisms are still disputed. Prevailing models range from hydrogeochemical forcing linked to relative sea level change—with an elusively component, to hypotheses that confer key roles to microbially induced catalysis and organometallic interactions. In the past, the inability to experimentally test the hypotheses led to criticism of regarding the validity of the proposed ideas, but this situation is rapidly changing with the emergence and increasing application of high spatial resolution and precision methods. For this session, we highly encourage submission of interdisciplinary studies addressing the natural occurrence of modern and ancient penecontemporaneous dolomite or its synthetic analogues via a combination of standard and novel analytical approaches capable of gaining sub-micron- to facies-scale insights.

### 3.2 Human impact on fluvial and estuarine depositional systems

Harm Jan Pierik - h.j.pierik@uu.nl (Faculty of Geosciences, Utrecht University, the Netherlands); Alessandro Fontana (Department of Geosciences, University of Padua, Italy); Nils Broothaerts (Department of Earth and Environmental Sciences, KU Leuven, Belgium); Jasper Candell (Department of Environmental Sciences, Wageningen University, the Netherlands); Kim Cohen (Faculty of Geosciences, Utrecht University, the Netherlands).

Human impact has considerably altered rivers, estuaries and deltas all over the world. Anthropogenic effects have strongly intensified over the last thousands of years, shaping the environments and depositional systems that we know today. Land use changes, industrial activities, and engineering, for example, caused changes in channel networks, floodplain vegetation, sediment supply, river discharge, delta subsidence and sea level. These changes have important implications for modern and future river and estuary management. Understanding their causes, effects and pacing is also vital for better interpreting depositional sequences using modern observations and analogues. The relative contribution of human impact and the spatial and temporal response of fluvial and tidal systems associated often are less well understood. To make a step forward and better isolate the various responses mechanisms involved, we need further identification of human impact in recent sedimentary records, correlation to human activities, and attribution of response to specific processes. In this session we welcome studies contributing to this, based on data reviews, field observations and modelling across a variety of spatial and temporal scales.

### 3.3 Geochemical insights on deposition and early diagenesis of modern carbonates

Peter Swart - pswart@rsmas.miami.edu (Rosenstiel School of Marine and Atmospheric Sciences, University of Miami, USA); Chelsea Pederson (RUHR University Bochum, Germany); Mónica Sánchez-Román (Vrije Universiteit Amsterdam, the Netherlands).

In this session, we invite contributions related to the deposition and early diagenesis of modern carbonates. Depositional systems ranging from continental to deep marine are welcome. Research topics include the geochemical characterization of carbonates in modern systems to better understand the range and meaning of depositional signals, new geochemical proxies, and mechanisms of carbonate precipitation and preservation during formation and the earliest stages of diagenesis is of interest. This session provides an opportunity to present studies within a diverse context of methodologies and approaches, all guided toward a better understanding of the formation and early alteration of carbonate deposits. Geoecological approaches evolving calibration of specific and/or new geochemical proxies such as stable isotopic fractionation and element partitioning for carbonates are very much encouraged. We hope to gather a range of multidisciplinary contributions linking fieldwork, laboratory experimentation with the application of cutting-edge analytical and spectroscopic techniques.

### 3.4 Interplays of hydrodynamic processes in shallow marine environments

Romain Vaucher - romain.vaucher88@gmail.com (CICTERRA, National University of Córdoba, Argentina); Marcello Guigliotta (Estuary Research Center -EsReC, Shimane University, Japan).

Do purely wave, tide, and fluvial environments in shallow-marine settings exist? In the last decade, an increased number of studies referring to “hybrid sedimentary systems” or “mixed-energy system” have been published. These studies focus on the interplay of at least two of the three main processes (i.e., river, tide and wave) controlling sedimentation and depositional architecture in coastal to shallow-marine settings. This led to the identification of transitional settings, new facies, and the result of wave-tide and river-tide process interactions, whereas less attention has been paid to wave-river ones. More studies are required to refine our conceptual models of facies and how interplay influences the sedimentation from the genesis of bedforms towards the overall geometry of the systems. This session aspires to group research exhibiting data from modern and ancient marginal marine environments subjected to process interplay and other studies on this topic based on numerical modelling and flume experiments.

### 4.1 Deep-water channels: Morphology, architecture, flow processes and sedimentation

Chenglin Gong - chenglingong@hotmail.com (College of Geosciences, China University of Petroleum, Beijing, China); Peter Talling (Departments of Earth Sciences and Geography, Durham University, UK), Michele Rebescus (National Institute of Oceanography and Experimental Geophysics- OGS, Italy); Matthieu Cartigny (Departments of Earth Sciences and Geography, Durham University, UK); Maarten Heijnen (National Oceanography Centre, University of Southampton Waterfront Campus, UK); Peng Hu (Ocean College, Zhejiang University, Zhejiang, China).

Deep-water channels in either marine or lacustrine have been the focus of extensive research since their discovery in the early 20th century. This is largely because they: (1) play a significant role in shaping and building continental margins; (2) are prodigious features traversing hundreds or even thousands of km of the seafloor; (3) serve as the major conduits for the delivery of large quantities of nutrients, pollutants, carbon, and sediments into deep-water sites; (4) preserve critical paleoclimatic and paleoceanographic information; and (5) form major subsurface oil and gas reservoirs worldwide. Despite their significance and widespread occurrence, deep-water channels remain a key research challenge in sedimentological community, because of their three-dimensional complexity and diversity. We hope the proposed session will facilitate open and lively discussion towards an advanced and deeper understanding of all aspects of deep-water channels in either marine and lacustrine basins.

We solicit presentations that explore morphology, architecture, flow dynamics, and genesis of deep-water channels, and welcome studies that may include, but not limited to: How do deep-water channels work; including how they are formed and maintained, internal flow processes, and how they evolve. Morphology, architecture, genesis, and reservoir characterization of deep-water channels in either marine or lacustrine basins.
How submarine channels host and influence ecological communities, and their globally important role for organic carbon transfer and burial. New ways to study deep-water channels, including numerical simulations, physical experiments, and direct field observations of active events on the seafloor.

4.2 Linking deep water depositional processes, facies and stratigraphy

Jörg Lang - lang@geowi.uni-hannover.de (Institute of Geology, Leibniz University Hannover, Hannover, Germany); Juan J. Fedele (ExxonMobil Upstream Research Company, Houston, USA); David C. Hoyal (ExxonMobil Upstream Research Company, Houston, USA); Roberto Tinti-Terzi (Earth Sciences Units, University of Parma, Parma, Italy); Timothy M. Demko (ExxonMobil Upstream Research Company, Houston, USA); Fabiano Gamberti (Institute of Marine Sciences - National Research Council, Bologna, Italy)

Understanding sedimentary processes is crucial to comprehend the sediment dispersal and the depositional record of deep water systems. Recently, new insights into flow processes, based on direct flow measurements and experiments, have led to revised interpretations of depositional processes in deep water systems. Concomitantly, investigations of the seafloor have contributed detailed images of geomorphic elements in the different deep water environments. Refined process-based facies models, linking depositional processes to stratigraphy, have thus been developed, also thanks to the contributions by outcrop and seismic data studies. Nevertheless, many important aspects of deep water sedimentary systems and their interrelations remain poorly understood. Our knowledge, however, can be improved especially through the integration of results from different research approaches. This session aims to bring together contributions on observations from modern systems (flow monitoring-seafloor bathymetry), outcrops, seismic data and experiments (physical-numerical) to deal with these issues. We seek contributions addressing the behaviour of sediment-gravity flows, focusing on: subcritical vs. supercritical flows, surging vs. sustained flows, transitional-hybrid events and interactions between flows and basin morphology. At a larger scale we aim at integrating different views regarding: autogenic organization vs. allogenic forcing, intrabasinal vs. extrabasinal controls, oceanographic forcing, sediment-feeding systems, sediment supply, tectonics and sequence stratigraphy.

5.1 Non-marine carbonates: from the geological record to present-day processes in continental settings

Giovanna Della Porta - giovanna.dellaporta@unimi.it (University of Milan, Earth Sciences Department, Milan, Italy); Enrico Capezzuoli (University of Florence, Earth Sciences Department, Florence, Italy); Mike Rogerson (University of Hull, School of Environmental Sciences, Hull, UK); EzherTaglisaci (Pamukkale University, Turkey)

Non-marine carbonates form in a variety of depositional settings such as lakes, rivers, hydrothermal vents, caves and soils, representing a significant component of terrestrial sedimentary basins and useful proxies of palaeoenvironmental conditions. Understanding modern physico-chemical and microbially mediated processes of non-marine carbonate precipitation helps constraining biogeochemical cycles and investigating the geological past in terms of changing depositional environments, hydrology and climate. A robust understanding of what features of a sediment are uniquely microbial is also a critical requirement of dawn of life studies on Earth and astro-biological research. This session aims to get better insights into the variety of non-marine carbonate facies and the abiotic/biotic control on processes of carbonate and associated minerals precipitation. We welcome contributions investigating fossil and modern non-marine carbonates through multidisciplinary approaches highlighting their variability across different depositional environments and the biological, environmental and physico-chemical factors controlling their formation, fabrics, accumulation rates and spatial distribution.

5.2 Palaeosols: a treasure chest to understand the sedimentary processes in continental realm

Giorgio Basili - basili@ge.unicamp.br (Univrsidade Estadual de Campinas, Brazil); Marco Benvenuti (University of Florence, Italy); Stefano Carnicelli (University of Florence, Italy); Isabelle Cojan (Centre de Géosciences, Mines ParisTech, France); André Marconato (Universidade Federal de Ouro Preto, Brazil); María Sol Raigemborn (Centro de Investigaciones Geológicas, Universidad Nacional de La Plata, Argentina); Jörg Lang - lang@geowi.uni-hannover.de (Institute of Geology, Leibniz University Hannover, Hannover, Germany); Augusto Varela (CONICET – Universidad Nacional de La Plata, Argentina)

Palaeosols are constantly present in continental sedimentary successions, from the Archean to the Present. Their occurrence can be extremely variable: from almost completely absent, where high sedimentation rate or extreme palaeoenvironmental conditions acted, to comprise more than 80% of the thickness in many other sedimentary successions. Nevertheless, the attention of who studies the ancient continental sedimentary successions is not always proportional to the occurrence of palaeosols. Although since the 80s the scientific consideration of palaeosols certainly increased, studies focusing palaeosols are not common in scientific papers and even more uncommon are studies linking sedimentary processes and palaeosols. Notwithstanding, palaeosols represent in continental sedimentary succession, a data source probably much more efficient than sediments. Indeed, if the deposits are commonly yielded by rapid and paroxysmal processes, often associated to abnormal conditions of the depositional environment, the palaeosols excavated from deep developed palaeosols forms in more than 1000 yr; during this period this is an open-system, that can record all the environmental conditions and changes in the atmosphere and just beneath its surface. By proposing this session we want stimulate the sedimentologists to present whichever communication whose focus are the palaeosols and/or their relationships with the sedimentary environments.

5.3 Modern lakes and lacustrine sediments as archives of geological environmental change and anthropogenic impact

Marta Marchegiano - marta.marchegiano@unige.ch (University of Geneva, Switzerland); Domenico Cosentino (Roma Tre University, Italy); Elsa Gliozzi (Roma Tre University, Italy); Daniel Ariztegui (University of Geneva, Switzerland); Laura Sadori (Sapienza University of Rome, Italy)

Lacustrine sediments can provide outstanding high-resolution and continuous archives of climate change, environmental evolution, anthropogenic impact, and tectonics. Only using a multiproxy approach is possible to disentangle the often intertwined biogeochemical and/or physical processes triggered by these phenomena. We target novel approaches and new exploration fields for the study of lacustrine systems, including modern limnology. Thus, we encourage oral and posters contributions that present basic and applied research on all aspects of both modern and ancient lake systems assembling a wide range of geophysical, sedimentological, geochemical, biological remains, and geomicrobiological datasets. Numerical models on lacustrine hydrodynamics are also welcome.

5.4 Cave sediments and paleoclimate

Laura Sanna - sanna@bitmeteoro.it (Institute for Biometeorology, National Research Council of Italy); Andrea Columbu (Department of Biological, Geological and Environmental Sciences, University of Bologna, Italy)

Caves are unique environments acting as sedimentary data repositories. Cave deposits can be grouped into two main categories: chemical precipitates and clastic sediments. Among them, calcite speleothems and stream-transported clastic sediments are the most useful as continental records. Since the erosional processes active on other proxies at the Earth surface are attenuated in the underground landscapes, karst systems can be considered as natural laboratories to reconstruct past climate and palaeo-environments. In fact, cave sediments are a very effective tool for paleoclimatic studies in continental environments for three main reasons: (i) they are poorly deformed by tectonic and erosive processes, (ii) they can provide very precise dating and (iii) there is a good chronological relation between cave deposits and Quaternary climate and eustatic variations. This session focuses on the many aspects related to underground karst sediments and cave depositional environments and processes. Therefore, it is open to multidisciplinary studies on clastic and carbonate cave sediments studied from both sedimentological and climatological point of view, as well as encouraging interdisciplinary contributions that analyze their morphology, texture, chemical composition, mineralogy and/or isotopic composition together with the interactions between their high resolution records and paleoclimate, palaeoenvironmental and paleogeographic reconstructions.
5.5 New advances in Lacustrine sedimentology

Pingsheng WEI (Research institute of petroleum exploration & development-Northwest (NWGI), PetroChina, Lanzhou, China); Huaqing LIU (Research institute of petroleum exploration & development-Northwest (NWGI), PetroChina, Lanzhou, China); Shuxin PAN - pansx@petrochina.com.cn (Research institute of petroleum exploration & development-Northwest (NWGI), PetroChina, Lanzhou, China); Carlos Zavala (Universidad Nacional del Sur, Buenos Aires, Argentina)

Lacustrine basins are important oil & gas-productive areas of the world. In recent years, lacustrine sedimentology has made great achievement in terms of source-sink system analysis, shallow-water delta, beach bar, deep-water sediments, fine-grained deposits, lacustrine carbonate, events deposits, deep reservoir forming mechanism and seismic sedimentology. Even so, problems and challenges of the lacustrine sedimentology are widely existed and needed to carry out innovation. The main idea of this theme is innovation and new exploration fields of lacustrine deposits. Specific subthemes may be referenced but not limited to the following eight aspects.

Subthemes:
- The gravity flow of lacustrine basins (hyperpycnal flows, MTDs, debris flow, sublacustrine landslide, turbidity flow)
- Fine-grained deposition and unconventional resources
- Beach and bar of lacustrine basins
- Shallow-water delta
- Lacustrine carbonate, mixed deposits and reservoir
- Modern lacustrine analogues
- Lacustrine hydrodynamics (waves, alongshore currents, bottom currents) and related sediments
- Other new field of exploration and development

5.6 Sedimentary processes, stratarch architecture and stratigraphy of alluvial systems

Ghisassi M. - massimiliano.ghisassi@unipd.it (University of Padua, Italy); Colomba L. (University of Leeds, UK); Fielding C. (University of Nebraska-Lincoln, USA); Mancini M. (CNR-IGAG, Rome)

Understanding of alluvial sedimentary processes and investigations of how genetically related alluvial units are organized in the stratigraphic record are key matters in sedimentology. Although remarkable advances in our understanding of alluvial systems have been made over the past decades, there still remains scope for a more refined investigation of alluvial deposition. This session calls for contributions on recent and on-going advances in the field of alluvial sedimentology, with specific emphasis on studies linking sedimentary processes and morphodynamics with related products in the rock record. Contributions are invited on topics that include, but are not limited to, the following: linking modern alluvial systems to their ancient preserved counterparts; novel data collection methods; facies models for alluvial systems; numerical modelling and laboratory experiments on alluvial processes and stratigraphy; interactions of alluvial systems with other environments, including lakes, deserts, deltas, estuaries, shorelines; interaction between alluvial deposition and tectonics.

6.1 Stratigraphic controls on the geochemical and fossil record

Silvia Danise - silvia.danise@unihf.it (Department of Earth Sciences, University of Florence, Florence, Italy); Emilia Jarochowska (GeoZentrum Nordbayern, Friedrich-Alexander-University Erlangen-Nuremberg, Erlangen, Germany); Rute Coimbra (GeoBioTec, Departamento de Geociências, Universidade de Aveiro, Portugal & MARE, Departamento de Ciências da Terra, Universidade de Coimbra, Portugal)

The intricously complex nature of sedimentary dynamics, both in time and space, exert a fundamental control on the abundance, variety and quality of information embedded in deep-time geological records. Integration of basin analysis and sequence stratigraphy with such areas as palaeoecology, biostatigraphy and geochemistry provides a powerful, interdisciplinary approach to reconstruct past environmental scenarios and biodiversity dynamics. As pointed out by the new discipline of stratigraphic palaeoecology, patterns observed in the fossil record can largely be predicted based on the stratigraphic architecture, e.g. the distribution of hiatuses and condensation surfaces. Stratigraphic palaeoecology also offers analytical tools allowing to account for these controls and the same tools can be equally applied to geochemical data. In fact, subaerial exposure, phases of non-deposition, erosion, reworking and bypass of sediments strongly impact also the geochemical record and cannot be overlooked. In this session, we aim at bringing together sedimentologists, palaeoecologists and geochemists to demonstrate how sequence stratigraphy can be employed as a common information framework in all these fields, and foster collaborations towards a better understanding of the links between past biotic and palaeoenvironmental changes.

6.2 Technological and conceptual advances in sequence stratigraphy. New achievements and open questions

Domenico Ridente - domenico.ridente@cnr.it (CNR-IGAG, Rome, Italy); Bilal U. Haq (Smithsonian Institution, Washington D.C., USA), Christian Gorini (UPMC Sorbonne Universités, Paris, France); Adriano Viana (Petrobras, Brazil)

Sequence stratigraphy developed as a new model in stratigraphy after the integration of the Exxon seismic-stratigraphic method with genetic concepts linking seismic attributes to sedimentary dynamics. The sequence stratigraphy model has been the focus of debates and proposals for nomenclatural and conceptual revision, owing to the increasing scenarios and different scale of application, each with its own practical requirements and specific key features as to the role of sediment supply and sea level in controlling sequence architecture. Methodological and conceptual advances driven by new technologies (such as 3D seismic geomorphology) have greatly improved high-resolution geophysical and subsurface studies, allowing, to some degree, to reduce the gap in scale and details compared with facies-based studies in the field. In addition, recent development of satellite imaging and the use of drone technology in wide ranging surveys, may provide means for conceiving field analysis from the perspective of regional, seismic-based geometric criteria. In this Session we welcome multi-scale and multi-approach studies that provide methodological and conceptual insights that may contribute in addressing open questions and enhance the development of sequence stratigraphy as an analytical method and an interpretative stratigraphic model.

7.1 Italian sedimentology in the world, world sedimentology in Italy: contribution to knowledge advance

Marco Brandano - marco.brandano@uniroma1.it (Earth Science Department, Sapienza University of Rome, Italy); Enrico Capezzuoli (University of Florence); Marcello Tropeano (University of Bari Aldo Moro); Daniela Ruberti (University of Campania, Italy); Domenico Chiarella (Royal Holloway, University of London, UK); Martyn Pedley (Geography Department, University of Hull, UK)

From the Dolomites to Etna, from the Venice Lagoon to the Trapani Salt pans, Italy embeds a wide spectrum of deposits and related depositional environments in a very short frame. Illustrations and characterization are due to scientists able to observe and describe such amazing and unique features. Starting from historical precursors as Pliny and Leonardo da Vinci, modern Italian and International sedimentologists have illustrated this richness as case histories used in the geology and heritages for the future. Aim of the session is to exhibit the Italian sedimentology that spotlighted the geology in the world with the contribution of the international sedimentologists that spotlighted the Italian geology.

7.2 Marine microbialites: a record of bio-sedimentary processes through time

Marcello Natalichio - marcello.natalichio@unito.it (University of Torino (Italy); Edoardo Perri (University of Cosenza, Italy); Francesco Dela Pierre (University of Torino, Italy); Tobias Himmler (Geological Survey of Norway); Maurice Tucker (University of Bristol, England) Ismail ÖmerVizmaı (Middle East Technical University, Turkey)

Microbialites are fascinating organosedimentary deposits that are present in carbonate, clastic, evaporite, phosphorite, and occur in a wide range of marine settings, including shallow and deep water environments as well as in extreme sedimentary environments (i.e. hypersaline and hydrothermal). The interest in microbialites from the scientific community and industry has increased exponentially in recent years because of their significance in unravelling the evolutionary history of life on Earth (and virtually on other planets), and their role in petroleum systems, as source and reservoir rocks. This session encourages contributions on any aspect of modern and fossil marine microbialites, especially where information is coming from different disciplines: sedimentology, geochemistry and geomicrobiology.

7.3 Life and sediment: biotic influences on clastic sedimentary processes, landforms and the stratigraphic record

William McMahon - w.j.mcmahon@uu.nl (Faculty of Geosciences, Utrecht University, the Netherlands); Harm Jan Pierik (Faculty of Geosciences, Utrecht University, the Netherlands); Neil S. Davies (Department of Earth Sciences, University of Cambridge, UK); Maarten G. Kleinmans (Faculty of Geosciences, Utrecht University, the Netherlands)
7.4 When volcanoes meet the environment
Andrea Di Capua - andrea.dicapua@idpa.cnrs.fr (CNR – IDPA, Italy); Gabor Kereszturi (Massey University, New Zealand)
Primary and secondary volcanic processes represent the crossroad between volcanological and sedimentological processes, and their influence on the environment is largely recognized. Nevertheless, a gap still exists between sedimentological and volcanological approaches to the same problems. This session aims to bring together researchers working on volcanic or volcanically influenced terrains to unravel the generation, transport and settling of volcanic particles through the geological time in different environments, in order to narrow this gap. We invite presentations that include, but are not limited to, 1) field-based description and interpretation of volcanoclastic sediments and related processes both in modern and ancient realms, 2) provenance studies that highlight the influence of volcanic activity on sedimentary basins, 3) studies on the characterization of physico-chemical processes that lead to the generation and weathering of volcanoclastic particles through time. This session is co-sponsored by the Commission on Volcanogenic Sediment of the International Association of Volcanology and Chemistry of the Earth’s Interior (IAVCEI).

7.5 Supercritical-flow processes and upper flow-regime bedforms
Rebecca Englert - rebecca.englert@ucalgary.ca (Department of Geoscience, University of Calgary, Canada); Pierre Dietrich (Department of Geology, University of Johannesburg, South Africa); Alexandre Normandeau (Geological Survey of Canada – Geological Atlas Program, Canada); Arnold Strobl (Geosciences Department, King Fahd University of Petroleum & Minerals, Saudi Arabia); Daniele Casalbore (Department of Earth Science, Sapienza University of Rome, Italy, CNR-IGAG); Matthieu Cartigny (Durham University, UK)
Supercritical flow conditions can occur in open-channel flows, subaqueous density currents, pyroclastic density currents, and katabatic winds, and thus affect a wide range of subaerial and subaqueous depositional settings, e.g., proglacial, fluvioglacial, coastal, deltaic, shallow- to deep-marine, volcanioclastic and carbonate-slope environments. Supercritical flows create upper flow-regime bedforms such as antidunes, chutes-and-pools, cyclic steps and braided flows, and transitional bedforms, whose development and properties are still largely constrained. Even if a growing number of upper flow-regime bedforms is reported in modern environments, these bedforms and their formation and interplay with other processes (e.g., turbidites vs reworking by infaunal burrowers) elude satisfactory explanation. This session welcomes field, experimental and numerical studies investigating the sedimentological aspects of modern and ancient upper flow-regime bedforms and their formative supercritical flows. Students and early career scientists are encouraged to submit.

7.6 The sedimentary record of past glaciations, from Palaeozoic to Present
Jasper Knight - jasper.knight@wits.ac.za (University of the Witwatersrand, Johannesburg, South Africa)
This session describes the sedimentary processes, products and environments associated with past glacial events through Earth’s history, from the Palaeozoic to the present day, including evidence from Pleistocene glaciations. The focus in this session is on the nature of different types of sedimentary evidence (including its geomorphic and stratigraphic contexts) and applications to climate and glaciological reconstruction. Particular emphasis is placed on the role of sedimentary facies properties, sedimentary structures and other evidence for subglacial and proglacial environments and processes, and the role and limitations of modern analogues and numerical models. Contributions to this session are invited from those working on any types of glacial or glaciolacustrine environments, past or present, and from terrestrial or marine settings, or from local to global scales.

7.7 Sedimentary processes on high-latitude continental margins
Renata G. Lucchi - rlucchi@inaogs.it (National Institute of Oceanography and Experimental Geophysics – OGS, Italy); Florence Colonne (National Institute of Oceanography and Experimental Geophysics – OGS, Italy); Forwick Matthias (Department of Geology, UiT The Arctic University of Norway); KarstvenGohl (Alfred Wegener Institute, Bremerhaven, Germany); Robert D. Larue (British Antarctic Survey, Cambridge, UK); Colm O’Coigfai (Department of Geography, University of Durham, UK)
The study of sedimentary processes in polar areas contributes to reconstructions of climate, environmental and oceanographic conditions, as well as ice-sheet dynamics on high-latitude continental margins. Studies can be based on the integration of acoustic data, including swath bathymetry and sub-bottom profiles, seismic data, as well as multi-proxy analyses of sediment cores including drill cores. The rapid response of the polar areas to the recent global climate warming is predicted to accelerate sea-level rise, leading to strong environmental and socio-economic impacts. A thorough knowledge about mechanisms forcing climate change in the past is an essential tool to understand the present state and to predict the future development of the large ice sheets. The session invites contributions addressing the sedimentary processes associated with past and present ice-sheets dynamics and paleo-oceanographic effects on the marine sedimentation from both observational and modelling approaches.

7.8 Integrated approaches to the recognition of contourite depositional systems
Michele Rebescos - mrebescos@inoags.it (National Institute of Oceanography and Experimental Geophysics – OGS, Italy); Eleonora Martorelli (CNR IGAG, Rome, Italy); David van Rooij (Uni Ghent, Belgium); Javier Hernandez-Molina (Royal Hull University London, UK); Giancarlo Davoli (ENI, Italy)
Bottom currents (BCs) and contourite depositional systems (CDSs) are important component of deep ocean basins and continental margins. The last decades have seen significant progresses in the characterization of CDSs and role of bottom currents on sedimentary and geomorphic processes. In order to better address the relationships between oceanographic processes, morpho-sedimentary processes and CDSs development further improvements are, however, still necessary. In this regard, a multidisciplinary approach among many disciplines (sedimentology, seismic stratigraphy, biostratigraphy, lithology, paleo-oceanography, numerical modeling, etc) using high-quality datasets may provide new significant insights.
Contributions from modern and ancient environments (both ancient deposits and outcrops) addressing CDSs nature (e.g., architecture, morphology, stratigraphy, lithology, habitats), mechanisms responsible for their formation and interplay with other processes (e.g., turbidites vs contourites, hemipelagites vs contourites) are welcome. In particular, major topics will be:
1) Link between bottom currents and contourite sedimentation at different scales:
7.9 Modern and ancient straits and seaways: sedimentary processes, hydrodynamics, facies models and perspectives

Sergio G. Longhitano - Sergio longhitano@uniba.it (University of Basilicata, Potenza, Italy); Francesco Latino Chiocci (Sapienza University of Rome, Italy); Valentina M. Rossi (University of Bergen, Norway); Domenico Chiarella (Royal Holloway University, London, UK); Namik Çalıştay (Istanbul Technical University, Ayazaga, Turkey); Gemma Ercll (Spanish National Research Council, Barcelona, Spain)

Tidal and non-tidal straits and seaways are challenging geological areas governed by current amplification generated by local oceanographic narrowing and providing uncommon sedimentary conditions. Although the growing interest on such systems due to their potential for production of renewable energy, strategic role for the transport industry, climatic impact on the interconnected basins and many more, straits and seaways lack accurate depositional models predicting their space-time sedimentary dynamics and evolution.

This session is primarily aimed at defining the state of knowledge on the variety of sedimentary processes and distinctive depositional signatures of such systems. Accordingly, it wants to provide a chance for stimulating discussions, idea exchanges and joint collaborations between sedimentologists, marine geologists, geophysicists, oceanographers and other researchers involved in the investigation of modern and ancient cases. After the opening of the key note of Robert W. Dalrymple (Queen’s University, Canada), talks and posters focused on recent breakthroughs, theoretical hydro-sedimentary modeling, interplay between tidal or oceanographic currents and other strait-related processes will be welcome. We also encourage presentations aimed at the re-examination of the recognition criteria of ancient straits in the rock record, the creation of static or dynamic facies-based models, and the discussion of present uncertainties or still unsolved problems.

7.10 Subaqueous mass movements and their consequences: from scientific knowledge to geohazard assessment

Daniele Casalbore - daniele.casalbore@unironia.it (Sapienza University of Rome, Italy); CNR-IGAG; Lorena Moscardelli (Jackson School of Geosciences, University of Texas, Austin, USA); Mike Clare (National Oceanography Centre, Southampton, UK); David Casas (Geological Survey of Spain, Madrid, Spain); Francesco Latino Chiocci (Sapienza University of Rome, Italy)

Subaqueous mass movements occur in lakes, fjords and oceans of the world, playing a key role in the configuration of coastal areas and continental margins as they represent one of the most efficient mechanisms of sediment transport from coastal to deep basins. The mapping and characterization of such processes has also significant implications for geohazard assessment, because such events can directly impact coastal and offshore infrastructures as well as cause local or destructive tsunamis. The aim of this session is to provide a forum to discuss field (outcrop, core and geophysical), experimental and numerical studies that advance our knowledge on the occurrence, failure and post-failure behaviour of subaqueous mass movements. Particularly we encourage multidisciplinary contributions aimed to assess and mitigate the geohazard potential associated to these processes both at local and regional scale.

7.11 The sedimentary record of earthquakes, tsunamis, and other extreme/catastrophic events

Massimo Moretti - massimo.moretta@uniba.it (Bari University, Italy); Jasper Knight (Wits University, South Africa); Giuseppe Mastronuzzi (University of Bari Aldo Moro, Italy); Andreas Vött (Mainz University, Germany)

Extreme/catastrophic events are by definition rare and episodic, but they have occurred frequently throughout Earth’s history. High magnitude events such as earthquakes, tsunamis, large-scale landslides, extreme floods and storms, extraterrestrial impacts, etc. often leave a sedimentary imprint in the geological record. Nevertheless, recognition of extreme event traces in sedimentary successions is often difficult and may be ambiguous. This session is focused on examples of seismites, tsunamites, and other sedimentary deposits that have been formed by extreme events. We encourage contributions including field-based examples discussing different approaches on data analysis and interpretation of these deposits. We also welcome studies on analogical modelling and numerical simulation for relationships between triggering processes and products of extreme events.

7.12 Sedimentary processes and biofacies: implications for planetary evolution, climate and astrobiology

Monica Pondrelli - monica.pondrelli@unich.it (University of Chieti - Pescara, Italy); Barbara Cavallazzi (University of Bologna, Italy); Lucia Marinangeli (University of Chieti - Pescara, Italy)

The aim of this session is to combine the sedimentary and geobiology approaches to reconstruct the past environments, the geological evolution, composition and habitability on other planets. This will also have implications in the study of deep time geological record on Earth. The current strategy for planetary exploration, which includes a sample return mission from Mars in the next decade, requires the definition of pathways for in situ analysis on planetary surfaces to correctly identify the depositional environments and the habitability potential. This implies a multidisciplinary, integrated approach to successfully address the in situ investigation on other planets.

Furthermore, it is fundamental to identify specific biomarkers associated to different habitability conditions which represent high priority targets for planetary exploration. Thus, the identification and characterization of terrestrial analogues is mandatory to constrain facies association and evolution on other planets as well as the potential presence and distribution of microbial community. Contributions addressing sedimentary processes and deposits on planets and the interaction between sedimentological and geobiological processes in complex geoenvironmental settings on Earth, are welcomed in this session.

7.13 Domino effects in sedimentology – from process to product to product to product to...

Helena van der Vegt - helena.vandervegt@deltaloes.nl (Delft University of Technology, Deltas, the Netherlands); Sophie Hage (National Oceanography Centre Southampton, University of Southampton, UK); Maria Azpíroz Zabala (Delft University of Technology Deltas, the Netherlands); Sanem Acikalın (Newcastle University, UK); Stéphanie Girardclos (University of Geneva, Switzerland)

Sediment and associated particles (e.g. pollutants, nutrients, organic carbon, microplastics) travel along fluvial, lacustrine and coastal environments before reaching the ocean. Each environment has its own sediment transport processes and depositional products, but these also interact over space and time. This session focusses on sedimentological interactions which operate as cascading or domino-like effects. We are interested in work linking processes to products across all physical and time scales, from grain-to-grain interactions to source-to-sink systems and from transient transport to preservation over geological times. We welcome concepts, case studies, numerical and experimental work which connects transport processes to sedimentary products from fluvial all the way to deep marine environments. We also encourage papers which shed light on the societal implications associated to these sedimentological cascades. Sediment transport to process interactions, e.g. transport and fate of microplastics and organic carbon, hazards to human-made infrastructures, ‘reading’ of the geological record in order to make predictions about future behaviour of the Earth system.

7.14 Planetary Sedimentary Geology: from remote sensing and in-situ datasets, numerical modelling, experiments and terrestrial analogues

Francesco Salesse - f.salesse@uu.nl (Faculty of Geosciences, Utrecht University, the Netherlands, International Research School of Planetary Sciences - IRSPS, Pescara, Italy); William McMahon (Faculty of Geosciences, Utrecht University, the Netherlands); Maarten Kleinheins (Faculty of Geosciences, Utrecht University, the Netherlands); Nicolas Mangold (LPGN, Université de Nantes/CNRS UMR6112, Nantes, France)

Studies in Martian sedimentary geology have never been more active. Orbital imagery has revealed a vast, ancient stratigraphic record and rover missions have enabled detailed sedimentological studies combined with mineralogical and chemical analyses. A growing list of geomorphic landforms is also known from Titan, though it remains uncertain whether the moon has a more ancient stratigraphic record.

As on Earth, extraterrestrial sedimentary rocks may archive information pertaining to ancient climate, tectonics and potentially, life. Considering ongoing and future exploration missions aim to find potentially habitable environments, sedimentary rock outcrops therefore make desirable targets. This session invites any contribution towards Martian and Titan sedimentary geology and geochemistry. In addition to the classic contributions, we particularly welcome presentations that utilise appropriate Earth analogues.
both modern and ancient. As ongoing and upcoming rover missions are providing increased opportunity to study extraterrestrial sedimentary strata, understanding directly accessible Earth analogues from which to base comparisons has never been more essential.

7.15 Evaporites on Earth and beyond
Stefano Lugli - stefano.lugli@unimore.it University of Modena - Reggio Emilia, Italy; Macej Babel (University of Warsaw, Poland); Vinicio Manzi (University of Parma, Italy)

After the full recognition of evaporites as true sediments, and not just chemical precipitates, a large array of sedimentological features have been documented in the last few tens of years, ranging from displacive, intergrowing (related to crystal growth), cumulative, branching, and to any type of clastic, and much more. Some of the sedimentary features are truly complex and may need to be carefully interpreted, especially after common diagenetic and later transformations, which may deeply change their original appearance. The goal of this session is to explore the very wide archive of sedimentary and diagenetic features on Earth, which actually represent our reference to understand what we are expecting to find on other planets, where evaporites are known to be present and are just waiting to be described in detail.

8.1 Ichnology, trace fossils and depositional environment
Francisco Rodríguez-Tovar -frtovar@ugr.es (University of Granada, Spain); Andreas Wettzel (University of Basel, Switzerland)

Biogenic sedimentary structures produced by organisms store important information for the interpretation of depositional settings because trace fossil producers sensitively respond on environmental conditions. In many instances trace fossils provide the only record of environmental changes. It is the purpose of the session to show new developments in ichnologic research and to illustrate the use of trace fossils in environmental analysis by case studies. Contributions may focus on both investigations in the Recent and in the rock record and may address (paleo)biological, sedimentological and geochemical and applied aspects in addition.

8.2 Records of the past: Distinguishing natural from human-signatures in sediment archives
Patricia Roesser -patricia.roesser@io-warnemuende.de (Leibniz Institute for Baltic Sea Research, Rostock, Germany); Jérôme Kaiser (Leibniz Institute for Baltic Sea Research, Rostock, Germany); Markus Czymzik (Leibniz Institute for Baltic Sea Research, Rostock, Germany); Martin Theuerkauf (University of Greifswald, Institute of Botany and Landscape Ecology, Germany).

Sedimentary archives witness human impact on the environment way further back in time than usually captured by instrumental records. In this respect, one of the major challenges in sediment-based paleoenvironmental research is to understand and disentangle the environmental response to regional climate forcing from direct human impact. There are various tools at hand to approach these objectives, such as identifying proper proxies for natural and anthropogenic impact and by integrating (multi-)proxy reconstructions from different paleoenvironmental archives from the same region that are ideally synchronized through independent stratigraphic methods. This session welcomes paleoenvironmental contributions based on well-dated sedimentary archives from the terrestrial and marine environment, that apply methods such as micro-facies analysis, inorganic and organic geochemistry, organic biomarkers, sedimentary DNA, vegetation reconstruction, and statistical approaches. The session also welcomes contributions on novel environmental proxies, especially those devoted to integrate different types of sedimentary archives.

9.1 From sediment generation to sediment routing systems
Luca Caracciolo - luca.caracciolo@unicat.it (GeoCentrum Nordbayern, FAU Erlangen-Nürnberg, Germany); Sergio Andò (Department of Earth and Environmental Sciences, University of Milano Bicocca, Italy); David Chew (Department of Geology, School of Natural Sciences, Trinity College Dublin, Ireland); Alberto Resentini (Department of Earth and Environmental Sciences, University of Milano Bicocca, Italy)

Sediment generation and associated routing systems regulate the fate of sediments from source to sink. They are intimately connected, and result from the interplay of allogenic controls such as tectonics, climate and lithology which, in turn, control denudation, sediment transport, deposition and storage. The quantitative assessment of source to sink systems requires multidisciplinary approaches, including the determination of sediment volumes and fluxes, composition and grain-size, or, in case of ancient systems, inverse reconstruction of the source area characteristics from the detrital mineralogy of basins including geo- and thermochronology approaches. In this session, we particularly encourage contributions focussing on how external forcing controls sediment generation, and the factors governing sediment grain-size partitioning and trajectories and their distribution within a sedimentary system. We particularly encourage contributions focussing on i) numerical landscape modeling, ii) mass balance – sediment budgets, erosion rates, iii) chemical weathering, iv) mechanical wear, v) transport dynamics (partitioning and sorting) and vi depositional controls on early diageneric evolution. We also welcome contributions highlighting technological advances and/or applications to mineralogical and compositional analyses of sediments. While regional case studies are welcome, in such contributions authors are encouraged to emphasize the broad significance of their work.

9.2 Arenite petrology for unravelling hinterland and offshore paleogeography. A tribute to Gian GaspareZuffa
Salvatore Critelli - salvatore.critelli@unicat.it (University of Calabria, Italy); Jose Arribas (Universidad Complutense de Madrid, Spain); William Cavazza (University of Bologna, Italy); Rosanna De Rosa, (University of Calabria, Italy); Daniela Fontana, University of Modena, Italy; Cristina Stefani (University of Padua, Italy); Eduardo Garzanti (University of Milan Bicocca, Italy)

The session start as a session honouring the contributions of Gian Gaspare Zuffa to arenite petrology and the source to sink paleogeography by using detrital signatures of arenites. Spatial and temporal significance of sand particles are one of the main focus for outstanding quantitative provenance analysis of clastic sediments, a topic in which after pioneering work of Zuffa in 1980, thirty years of research provided significant contributions in diverse ancient and modern sedimentary basins in the world. Extrabasinal to intrabasinal processes and related grains generation, and dispersal pathways within sedimentary basins, can quantify sedimentary budgets that are useful for paleogeographic and paleotectonic reconstructions.

10.1 Anthropocene: a rising and critical issue in Earth Science and Society
Sergio Cappucci - sergio.cappucci@enea.it (ENEA, Italy); Vincenzo Pascucci (University of Sassari, Italy); Martin R. Gibling (Dalhousie University, Canada)

Biotic and atmospheric markers of human influence in the Anthropocene have been identified, but stratigraphic evidence is still debated by the geological community. Some stratigraphic signals are synchronous and distributed worldwide. Others are related to local dispersal of legacy sediments, pollutants, and technological debris, with records that extend back to the later Pleistocene. Many human-generated materials degrade slowly, allowing waste and relics to be preserved as “anthropic fossils”. The session gives an opportunity for sedimentologists to contribute more fully to the “Anthropocene debate” through research and datasets on sedimentary features and anthropogenic markers. We seek presentations from land-based research (archaeological sites, urban areas, contaminated sites, caves, mines, rivers, dams, forests and agricultural areas) and the submerged environment (coastal areas, continental shelves, deep ocean, lakes, lagoons and estuaries).

The Anthropocene Working Group (AWG) has recommended formal designation of the Anthropocene starting at 1950, and the geological community is approaching the formalization of a new geological epoch. In view of the widespread interest in this concept, the IAS community needs to actively engage the public around the Anthropocene question. The session aims to promote a knowledgeable and coherent approach to these important, wide-ranging issues.

10.2 Archaeological sedimentology: a highway through interactions between past human societies and their environment
Julien Curie - julien.curie@mae.u-paris10.fr (UMR CNRS 7041 ArSocN / Sorbonne Université, Paris, France)

The great development of Geoarchaeology in recent decades, along with the progress of analytical methods in Geosciences, has underlined the importance of the study of sediments preserved in archaeological contexts. Many multidisciplinary research programs now focus on these archaeological sediments, analyzing them using several sedimentological and geochemical methods, directly on field as well as later in laboratory. All
of them draw a true way to investigate the natural (climatic - tectonic - geographic) and anthropogenic controls on sediment deposition and contribute to enhance our understanding of the connectivity between human activities/settlements and the past environmental contexts over historical timescales. The aim of the session meeting is to gather researches working on these geological sediments with a multidisciplinary approach, in order to depict a geoarchaeological catalogue based on sedimentological features controlled by depositional conditions and anthropological impacts. Thus we will try to define new lines of discussions, emphasizing on methods to employ and new research themes to develop around the concept of “anthropogenic facies”, challenging to upgrade the dialogue between nature and culture.

10.3 Quaternary evolution of coastal and alluvial plains: a key to understand subsidence and aquifer hazards

Daniele Ruberti – daniela.ruberti@unicampania.it (Department of Civil Engineering Campania University “L. Vanvitelli”, Italy); Marco Sacchi (IAMC-CNR Naples, Italy); Orsolya Sztanó (Eötvös Loránd University, Budapest, Hungary)

Most of the world’s major river deltas and related alluvial coastal plain are affected by subsidence. The main effects of subsidence include aquifer salinization, inundation of lowlands and coastal erosion, increased vulnerability to flooding and storm surges. The risk of rapid coastal subsidence to infrastructure and economy is significant as well. Subsidence rates reflect regional and local tectonic effects but it can be greatly enhanced by consolidation of sedimentary state. Usually investigations have measured compaction rates in the shallow subsurface whereas few data exist that quantify compaction rates over the entire Holocene succession, overlying the Pleistocene substrate, mostly characterized by sands, silts, clays and peats compacting under their own weight. Even if primary consolidation process is concluded (due to water extraction for the agricultural and industrial uses, among others) soil deformations can still occur due to creep and will result in an additional vertical movement at ground surface. This session aims to explore the causes and consequences of coastal subsidence by taking into account the variety of independent subsidence drivers and focusing on the role of the sedimentary architecture and the related geotechnical characteristics of coastal settings. We encourage studies addressing a wide range of spatial and temporal scales and applying state of the art methodologies. Interdisciplinary studies are strongly encouraged as they provide the basis for a sustainable management.

10.4 Geodiversity, geoheritage and geotourism

Lars Erikstad - Lars.Erikstad@nina.no (Norwegian Institute for Nature Research, Norway); Piero Gianolla (Ferrara University, Italy); Luisa Sabato (University of Bari Aldo Moro, Italy)

Aim of this session is to collect contributions regarding geodiversity and geoheritage, and that specifically address the relationships between these two important Earth aspects and tourism. Furthermore, welcome will be those contributions that will highlight how the knowledge of stratigraphic-sedimentological characters of a site can contribute to promote geological knowledge.

10.5 Sedimentology and sedimentary geology applied to site effects evaluation at ground surface: advances and future perspectives

Iolanda Gaudiosi, iolanda.gaudiosi@igag.nr.it (CNR IGAG, Italy), Gino Romagnoli, (CNR IGAG, Italy)

Site effects have been deeply studied over past decades and it is now well known that local geology can strongly affect ground motion amplitude, duration and frequency content, producing different ground motion. The analysis of the influence of local effects on seismic response at ground surface is the main issue of seismic microzonation studies and site specific ground motion analyses. Despite this knowledge, recent experimental evidences have shown that similar sedimentary covers belonging to different depositional environments can result in different seismic response levels. This session therefore encourages contributions from scientists in the field of geology, geophysics, engineering seismology and geotechnical engineering for discussing on the state of the art of studies in which the effects of site response are related to sedimentological features. Multidisciplinary contributions with a special focus on site characterization and subsoil models reconstruction are also welcome. Insights from worldwide seismic microzonation will also be particularly appreciated.

10.6 Stratigraphic and Sedimentological Evidence of Past Earthquakes

F. Livio – franz.livio@uninsubria.it and Francesca Ferrario (Insunbria University), Stefano Gori and Emanuela Falcucci – (INGV).

Strong earthquakes trigger a plethora of environmental effects that can be recognized in the stratigraphic records. The most important of such effects is probably that associated to primary tectonic deformation, namely the rupture at Earth surface of the earthquake causative fault. The interference of fault rupture events with the exogenous processes leaves traces that can be identified with specific “on-fault” stratigraphic and sedimentological analyses and that can provide with data useful for defining the slip history of the investigated fault, its kinematic parameters and a series of information that can represent ingredients for seismic probability analyses. The recognition and analysis of such evidence offer the opportunity to expand the knowledge of the seismic history over wider time windows and to derive seismic parameters for ancient earthquakes, including also macroseismic intensity. However, more work is required to better integrate the various observations, dating uncertainties and modelling techniques and to derive earthquake source parameters for the causative events. This session will bring together different disciplines that focus on the stratigraphic and geologic evidence of past earthquakes with the common aim to better depict the so-called seismic landscape of a region.

10.7 Managing coastal sediments

Sergio Cappucci - sergio.cappucci@enea.it (ENEA, Italy); Edward Antony (Aix-Marseille University, France); Enzo Pranzini (University of Florence, Italy); Victor N. de Jonge (University of Hull, UK); Giorgio Fontolan (University of Trieste); P. Lupino (Regione Lazio, Italy)

Beach erosion is the result of a deficit in the coastal sediment budget. To manage this process coastal sediment stock assessment is crucial, even more under the Integrated Coastal Zone Management (ICZM) framework. Being hard to increase sediment input from the river system, which is actually reducing due to soil erosion control, flood reduction and dams construction, a knowledge based managing of sediment moving along the coast is the only possible short and medium time strategy to address the problem, with or without hard shore protection structures. On the other side, shelf sediments are increasingly used to artificially nourish eroding beaches, but this non-renewable resource needs to be assessed and managed in the most sustainable and profitable way. The same is for sediments deposited on the uprift side of harbors and marinas, as well at river mouth jetties; a land-to-land nourishment can be carried out through bypass systems, provided a strong knowledge of the sediment budget and supported by stakeholders consensus. Under a growing human coastal occupation, and within a sea level rise scenario, managing coastal sediments has scientific, technical and administrative issues which deserve more consideration, also to reduce stakeholders conflicts.

Aim of the proposed session is to collect and compare scientific, technical and legal experiences supporting a wise management of this precious resource.
Mixed siliciclastic-carbonate deposits represent the most common examples of a particular type of sediments that lie between the extrabasinal (terrigenous, epiclastic) and the intrabasinal (mainly carbonate) end members. In recent years, siliciclastic-carbonate deposits have received increased attention since it has been recognized that they are more common in the geologic record that previously thought. Despite the relative importance of these units, there is no consensus between the carbonate and siliciclastic communities regarding the use of a shared nomenclature and/or comprehensive depositional models. Therefore, we true nature of these deposits and the controlling parameters associated with their evolution are far to be fully understood.

Mixed deposits are important in the context of hydrocarbon exploration and production since the siliciclastic and carbonate fractions can affect elements of the petroleum system differently.

The aim of this session is to gather contributions focusing on different aspects pertaining to mixed deposits with special interest in case studies that (i) showcase the coexistence of both siliciclastic and carbonate deposition, as well as (ii) link different elements of the depositional profile from shallow to deep-water deposits. Contributions from both academia and industry are sought.

11.3 Sedimentology at reservoir-scale: recent improvements and way forward

Francesco Bigoni - francesco.bigoni@eni.com (Eni SpA Upstream and Technical Services); Ornella Borromeo (Eni SpA Upstream and Technical Services); Massimo Catanzaro (Eni SpA Upstream and Technical Services); Giancarlo Davoli (Eni SpA Upstream and Technical Services).

Sedimentology has always represented a key factor for reservoir modelling, being the main driver to infer the reservoir vs non-reservoir facies characteristics and relationships, as well as porosity and permeability distributions. Recent improvements in reservoir modelling capabilities and computational capacity result in the chance to input reservoir models with more accurate sedimentological data and to obtain more geologically consistent representations. This leads to different modelling opportunities: a first approach is to build large geocellular models, unlocking the possibility to represent the reservoir heterogeneity in greater detail; another approach is the realization of a high number (tens to hundreds) of equiprobable and alternative scenarios in the attempt to capture the reservoir uncertainties. The two approaches are not mutually exclusive. However, independently of the modelling approach, accurate sedimentological models derived from subsurface and outcrop analogues assume therefore a stronger importance considered that their characteristics can be preserved with a high detail. The session may include both methodological contributions and case histories of outcrop and subsurface studies in clastic and carbonate depositional systems as well as multi scale scenario and/or high resolution reservoir modelling studies.

11.4 Siliciclastic-carbonate and other mixed deposits: sedimentology and reservoir properties

Domenico Chiarella - Domenico.Chiarella@phul.ac.uk (Royal Holloway, University of London, UK); Lorenza Moscardelli (Equinor Research and Technology), Marcello Tropeano (University of Bari Aldo Moro, Italy)

New frontiers in mudrock sedimentology and stratigraphy

Gabriele Gambacorta - gabriele.gambacorta@eni.com (Geology and Geophysics Research and Technological Innovation Opt., Eni, Italy); Jurgen Schieber (Department of Geological Sciences, Indiana University, USA).

Mudrocks represent roughly the 75% of the stratigraphic record. The understanding of the processes that control their deposition and diagenesis is then crucial for the interpretation of Earth history. Besides their importance as stratigraphic and paleoclimatic record, fine-grained sediments are also economically relevant as cap-rocks and source rocks. In recent years, research on mudrocks has revealed the complexity of the physical and chemical processes controlling their sedimentation. The paradigm that mudstones accumulated in low-energy settings via suspension settling have been finally overcome. Thanks to new data, flume experiments and new techniques, insights about depositional styles and processes have emerged. Complex micro- to large-scale processes control mudrocks erosion, transport and deposition, thus impacting on lateral and vertical heterogeneity of fine-grained successions. Variations in the depositional style and early diagenesis of mudrocks exert a major control on sealing efficiency and organic matter dilution and preservation, thus affecting their properties as reservoir and cap rocks and has inherent economic implications.

The aim of this session is to provide a representative review of the state of the art of mudrocks petrography, sedimentology and stratigraphy. Within this framework, we invite contributions that capture the complexity of physical and chemical depositional processes of fine-grained sediments both from modern environments and past sedimentary records.

11.6 Recent advances in carbonate diagenesis studies: analytical challenges and application to case histories

Marta Gasparinni - martasgasparinni@iplt.fr (Georesources Department, IFP Energies nouvelles, France); Tatyana Gabellone (SPES - Sedimentology, Petrography and Stratigraphy, Eni S.p.A., Italy); Cédric M. John, (Department of Earth Science and Engineering, Imperial College London, UK).

Diagenetic processes significantly modify initial carbonate sediment properties, in particular mineralogy and crystal size (reactive potential), porosity and permeability (flow properties), and geochemistry (isotope and elemental composition). Understanding the temperature (T), pressure (P) and timing (t) at which these processes occur, as well as the geochemistry of the fluids involved (isotope composition, salinity) is fundamental in building conceptual models aiming at predicting the temporal and spatial occurrence of diagenetic modifications.

Constraining the diagenetic processes and their key parameters (T, P, t, fluid composition) by combining conventional petrographic and geochemical approaches often remains a challenge and has inherent limitations. Recent analytical developments that overcome the limits of conventional approaches promise to open new avenues for diagenesis studies, in particular by reducing uncertainties surrounding data interpretation. However, the applicability fields of such techniques in the entire realm of diagene is underexplored, and the limits and drawbacks of the new approaches still need further investigation.

This session aims to solicit discussion of recent achievements in this field, where the most innovative approaches to reconstruct carbonate diagenesis
have been developed or applied alongside with more traditional tools, with possible applications to solve future energy issues (oil & gas, geothermics, CO₂ storage) in sedimentary basins.

11.7 Seismic Geomorphology and Seismic Sedimentology: Improvements and Applications
Hongliu Zeng - zengh@beg.utexas.edu (Bureau of Economic Geology, Jackson School of Geosciences, The University of Texas at Austin, USA); Xiaomin Zhu (China University of Petroleum, Beijing, China)
Seismic interpretation is traditionally low resolution for sedimentological research. In recent decades, seismic interpretation of high-resolution (meters to tens of meters) subsurface sedimentology has become increasingly in demand. In mature hydrocarbon exploration basins especially, subsurface sedimentologists are more concentrated on thin, small, and stratigraphic targets for infill drilling. During the pursuit of high resolution, seismic geomorphology (Posamentier, 2000, 2001) and seismic sedimentology (Zeng et al., 1998; Schlager, 2000) arise and thrive. The research on subsurface sedimentology and seismic geomorphology are the seismic investigation of sedimentary rocks and depositional processes, which came into being with the mapping of litho-geomorphologic facies by joint study of seismic lithology and seismic geomorphology (Zeng and Hentz, 2004). It focuses on high-resolution seismic imaging and interpretation of subsurface sedimentology (lithology, facies, and referred reservoir quality), analogous to field-based sedimentology and well-based subsurface sedimentology, but more accustomed to reservoir prediction. The researches of seismic geomorphology and seismic sedimentology have been becoming a cutting-edge for fine sedimentology and fruitful achievements have been made in the world. We propose this session for researchers to present and discuss new tools, methods, and challenges, and also showcase the continued success of seismic geomorphology and seismic sedimentology applied to exploration and production of petroleum and other mineral resources.

11.8 Sedimentary heterogeneity controls on fluid flow in aquifers and hydrocarbon reservoirs
Giacomo Medici - G.Medici@leeds.ac.uk (University of Leeds, UK); Luca Colombera (University of Leeds, UK); Na Yan (University of Leeds, UK); Mattia Marini (University of Milan, Italy); Nigel Mountney (University of Leeds, UK)
Description and quantification of sedimentary heterogeneities is fundamental to constraining connectivity of facies and distribution of permeability in geological porous media. This has important implications for establishing approaches to hydrocarbon recovery, underground carbon sequestration, groundwater exploitation and remediation for contaminant dispersal in aquifers. Linkages between depositional environments, sedimentary facies, patterns of diagenesis, and petrophysical properties have been widely described from a range of different settings, demonstrating the value of sedimentology in reservoir characterization. Datasets acquired from outcrop and core logs can provide information on how sedimentary facies stack spatially and aid in development of predictive models for subsurface analogues. Furthermore, petrophysical and hydraulic testing from wells assists in the detection and appraisal of flow effects for different facies configurations, and therefore makes the characterization of productive reservoirs more robust.
We invite research presentations on characterization and modelling of sedimentary and petrophysical heterogeneities from both carbonate and siliciclastic deposits. Contributions are invited on specific topics that include, but are not limited to, the following: capturing heterogeneities from

11.9 Organic matter in palaeoenvironmental, palaeogeographical and hydrocarbon exploration research: progress and perspectives
Amalia Spina - amalia.spina@unipg.it (University of Perugia, Italy); Annette E. Götz (University of Portsmouth, UK); Nicoletta Buratti (Total SA, France)
The session will focus on the progress of current research and the role of organic matter, palynofacies and palynology studies as an important tool in geoscience. A wide range of topics highlighting the application of organic matter studies to hydrocarbon exploration, palaeoenvironmental reconstructions and stratigraphy will be included.
The session aims at stimulating discussions and collaboration on:
-integrated palynofacies, organic facies and sedimentological analyses as contribute to palaeoenvironmental reconstruction and basin evaluation;
-organic facies as tool for palaeoecological and palaeoclimatic reconstructions;
-palaeobiogeographic reconstructions by means of marine and terrestrial palynomorph associations;
-thermal maturity assessment of organic matter by optical and geochemical methods.
Participants are invited to present methodological approaches and significant case studies in reconstructing depositional environments, burial and thermal modelling of sedimentary basins, cyclostratigraphy, sequence stratigraphy, etc.
All these topics are crucial for the future application of organic matter studies as a fundamental research in the fields of Earth Science.

11.10 Methane-rich fluid expulsion processes and their signatures in marine sediments
Daniela Fontana - daniela.fontana@unimore.it (University of Modena, Italy); Rossella Capozzi (University of Bologna, Italy); Jochen Knies (Geological Survey of Norway NGU, and Centre for Arctic Gas Hydrate, Environment and Climate Cage at UiT Arctic University, Norway); Giuliana Panieri (Centre for Arctic Gas Hydrate, Environment and Climate Cage at UiT Arctic University of Norway, Norway)
Enormous amount of methane and gas hydrates are found along continental margins worldwide, beneath Arctic permafrost and Antarctica ice. The deep methane-rich fluids tend to migrate upward through diffuse intergranular flow and/or advective flow through structural or stratigraphic permeable pathways, eventually mixing with shallow methane sources, inducing the precipitation of thick authigenic carbonates linked to the anaerobic oxidation of methane. There are still many unsolved questions and fundamental science challenges related to methane carbon flux in the marine environment, gas hydrate reservoir responses to natural and anthropogenic perturbations, as well as their evolution through time. In this session we welcome contributions showing examples and evidences from sedimentology, bio/geochemistry and ecology, that control and/or are affected by methane-rich fluid expulsions and gas hydrate settings. We wish to create synergies between marine and terrestrial sciences, modern day and past observations, for a multifaceted view on methane rich fluid dynamics and their signatures in the sedimentary column.
FIELD TRIPS, HALF-A-DAY WORKSHOPS AND SHORT COURSES

A wide range of field or laboratory activities are offered to the registered participants, with 8 pre-meeting (A), 6 intra-meeting (IM) and 8 post-meeting excursions (B) as well as 3 half-a-day intra-meeting workshops (IW) and 3 short courses (SC), one fieldtrip and two workshops for Early Career Scientists (see page 38).

- Activities will only take place if the minimum number of participants is reached.
- Once the maximum number of participants is reached, registration for any of the activities will be closed.
- No refund is possible for participants registered to any of the activities, unless they don’t reach the minimum number of participants and will be cancelled by the organisation.

Field trip – General. Costs may increase for late bookings (i.e. after the conference early bird registration deadline) and refer to overnight stays in double rooms. You may ask for a single room the field trip leaders, but a single room could be unavailable or available with an onsite extra cost. Before purchasing non-refundable travel tickets, please ask organizers for confirmation that the trip will actually take place. Participants registered for a cancelled field trip will be offered to register for another field trip or will be fully reimbursed. Several weeks prior to the field trip, you will receive information about the details of meeting points, transportation during the trip, phone numbers and email addresses of field trip leaders. Neither the organizers nor the field trip leaders can offer insurance covering illness, injury or any other accidents for participants. All participants must therefore sign a liability waiver form that will be provided at the beginning of the field trip. Field trip guidebook will be provided as .pdf files sent to participants by e-mail before the conference.

Pre-Conference (A) field trips (page 22) will start from localities easily reachable by both plane or train. The travel from their countries to the starting localities is responsibility of participants and it is not included in the field trip costs. Overnight stays in double room and main meals (except last-day dinner) are included in the cost.

Pre-meeting field trip will end in Rome on 9th September 2019 (late evening) and the travel to Rome is included in the field trip cost, except for the field trip A2 (Venice). In fact, in order to allow the participant to spend a few hours in the wonderful city of Venice, the return to Rome of the field trip A2 has not been planned (and it is not included in the cost). Therefore, participants must provide themselves on their return to Rome. It is suggested to book in advance an evening/night high-speed train from Venice to Rome (50 to 90€, less if booked in advance). Note that one extra pre-meeting fieldtrip is organized for early career scientists (see page 34)

Intra-Conference (IM) field trips (page 26) Full-day field trips will start and end in Rome on Thursday 12 September, to visit geological outcrops in the Latium and Campania regions. Travels (by train or bus) and lunch are included in the cost.

Intra-Conference (IW) half-a-day workshops (page 19) Three intra-meeting workshops are offered on Thursday 12 September at the price of 30€ each. As they last a few hours, it is possible to choose two of the workshops; otherwise you may have half-a-day to visit a (small part of) Rome. No travel or lunch are scheduled.

IW1 is a Geoaarcheologic city tour with departures every hour from Colosseo underground station. The tour last 2.5 hours.

IW2 is a workshop based on facies analysis on travertine cores and on travertine plates cladding the buildings of the University Campus.

IW3 is a workshop of ENI on cores from giant reservoirs recently discovered; it will take place within the University campus.

Post-Conference (B) field trips (page 29) Post-Conference field trips will start from Rome on 14th September 2019 (early morning). Only field trip B1 (Turin) will start in late afternoon of 13th. Overnight stays in double room and main meals (except last-day dinner) are included in the cost. Travel expenses from Rome and back for Post-Conference field trips B4, B5, B6 and B7 are included. Instead participants to field trips B1, B2, B3 and B8 have to arrange the return on their own expenses, to allow participants to enjoy Turin, Milan, Bologna and Palermo, respectively.

Short Courses (SC) – (page 18) Short courses are offered before (2) and after (1) the conference; they are targeted to student or researchers interested in new field of investigation. The short courses last one day; the pre-conference SC will be held in Bologna and deals with sequence stratigraphic interpretation of alluvial facies in cores while the two post-conference SC deal (held in Rome) deal with the Sr isotope stratigraphy and with the modelling of thermal evolution of sedimentary basin

Sightseeing activities – In the website, optional activities will be offered, in order to visit main places of interest and tourist attractions in Rome.
Pre- and Post-Conference Short Courses

Post-conference short course SC1.

High-resolution sequence stratigraphy in the Po Plain from sediment core analysis
At University of Bologna by Alessandro Amorosi, Luigi Bruno, Veronica Rossi, Daniele Scarponi (University of Bologna).
Cost: 100€ (transport to Bologna not included); Max 30 participants. CONTACT: alessandro.amorosi@unibo.it

The Po Plain hosts one of the most studied late Quaternary stratigraphic successions in the world. High-resolution subsurface sequence stratigraphy in this area has been carried out through detailed facies analysis from continuously cored boreholes. During this one-day course, participants will have the opportunity to observe a variety of facies associations from alluvial, deltaic, coastal and shallow-marine Late Pleistocene to Holocene depositional environments. The course is designed to be cross-disciplinary: it will be shown the extent to which data from molluscs and the meiofauna (benthic foraminifers and ostracods), geochemical data and engineering properties of sediments may contribute to facies interpretation and stratigraphic correlation. Special attention will be devoted to the identification of the key surfaces for high-resolution sequence-stratigraphic interpretation. The course is for Quaternary geologists, sedimentary geologists, palaeontologists, personnel from the oil and gas industry, and anyone involved in reservoir description and refined facies characterization.

Pre-conference short course SC2.

Sr-isotope stratigraphy (SIS): Methods, applications and limitations
At Sapienza University (Rome) by Gianluca Frijia (University of Ferrara, Italy);
Cost: 50€; Max 25 participants. CONTACT: gianluca.frijia@unife.it

In the last years the use of Sr/87Sr for stratigraphic purposes, as a high-resolution tool of chronostratigraphic dating and correlation of marine sediments, has increased dramatically. The so-called Strontium Isotope Stratigraphy (SIS), relies on the fact that the Sr/87Sr value of the ocean varied through geological time and that the composition of the ocean waters is homogeneous with regards to Sr isotope at any time due to the long residence time of Sr in the oceans. However, despite the high potential of SIS, some possible shortcomings may severely complicate its application (e.g. diagenesis). The objective of this course is to give an introduction to the method and a guideline for the correct use of SIS showing that a rigid procedure is mandatory to apply this chemostratigraphic method correctly. The main applications and limitations will be discussed in detail by means of several examples from around the world where SIS has been applied successfully.

The course will consist of by lessons and practical exercises derived from case studies.

Pre-conference short course SC3.

Traditional and new techniques for unravelling the thermal evolution of sedimentary basins
At Sapienza University (Rome) by Luca Aldega, Sapienza Univ. of Rome, Sveva Corrado and Andrea Schito, Univ. Roma TRE, Giulio Viola, Univ. di Bologna
Cost: 50 euros; Max 25 participants CONTACT: luca.aldega@uniroma.it:

The quantitative reconstruction of the thermal evolution of sedimentary basins represents one of the major goals in Basin Analysis, applied to renewable and not renewable energy exploration and to stratigraphic/structural studies in various geodynamic settings. The recent development of new techniques for the study of the organic and inorganic fraction of sedimentary successions by Raman spectroscopy and K-Ar dating as tools useful for constraining the thermal history of Paleozoic to Cenozoic sedimentary successions in space and through time and for tectonic interpretation. Benefits and limitations of each paleothermal indicator and their correlations will be discussed against relevant case studies from a plethora of geochemical settings, from wedge-top and thrust-top basins, passive margins, to frontal and axial zones of fold-and-thrust belts.

Simple guided practical exercises dedicated to modelling of the smectite-to-illite reaction in sedimentary successions, deconvolution and statistical treatment of Raman spectra of organic matter, interpretation of K-Ar ages of illite crystals in sediments and fault gouges will complete this overview.
Half-a-Day Workshops on Thursday, Sept. 12

The three offered workshops are organised in different shifts so that one may have the opportunity to attend up to two among the three. Check the availability of the hours you prefer before registering. Cost for each workshop is 30€; W1 and W2 may host up to 300 participants, WP3 up to 50.

**W1. On the rocks: Looking at cores to discover the secrets of giant reservoirs**

Marco Fonnesu (Eni, Italy) and Salvatore Miraglia (Eni Upstream & technical Services, Italy);
CONTACT marco.fonnesu2@eni.com

Core and core samples, although not routinely collected during oil and gas E&P activities, represent key elements for building sedimentological models in the subsurface, as well as for understanding and characterizing the reservoir systems.

Cores are the only data allowing to perform direct analyses of the rocks lying in the subsurface, thus providing information like those that would be collected by studying an outcrop. Sedimentological and petrophysical information are also used to calibrate indirect subsurface data as well-logs and seismic.

In the last decades a variety of new approaches, including advanced techniques, have been developed to discover the characteristics of the reservoir from the core.

Along the workshop, a unique dataset of deep water clastics and carbonate core samples, coming from Eni recent giant discoveries, will be presented to demonstrate how they are integrated with well-logs and seismic data.

**W2. Geo-archaeology of the Central archaeological area (CAA) of Rome**

Marco Mancini, Massimiliano Moscatelli, Francesco Stigliano, Cristina Di Salvo (CNR IGAG - National Research Council, Italy);
CONTACT marco.mancini@igag.cnr.it

This workshop consists of a fieldtrip to illustrate the evolution of Rome’s historic center from geological to historical times. The excursion is organized in four stops and two main transfers, during which participants will receive information on history and archaeology of the area.

Stop 1. The Colosseum and its subsoil.
This stop offers the possibility of framing the stratigraphy and paleo-geography of the area through the correlation of the most recent subsoil data. Participants will be offered an archaeological overview of the monument.

Stop 2. Stratigraphic and monumental architectures of Palatine.
In this stop it will be detailed the buried stratigraphic architecture of Palatine, whose framework is constituted by Pleistocene volcano-sedimentary interfluvic units and by the infilled incised valley of the ancient Tiber River. Participants will also observe how the anthropic action has deeply modified the southern Palatine and the Murcia valley.

Stop 3. Fluvial sediments and tuffs of Roman Forum and Capitoline hill.
This stop will allow participants to observe fluvial deposits and tuffs cropping out at the Horrea Agrippiana and Capitoline hill.

Stop 4. Drinks and local food!

**W3. Travertine facies: a Tivoli core-workshop and walk through the Sapienza University Campus**

Giovanna Della Porta (University of Milan, Italy), Enrico Capezzuoli (University of Florence, Italy), Alessandro Mancini (University of Perugia, Italy);
CONTACT: giovanna.dellaporta@unimi.it; enrico.capezzuoli@unifi.it

The core workshop aims at observing the travertine facies characteristics and their vertical superposition in cores drilled in the Pleistocene hydrothermal travertines quarried in the Tivoli area, east of Rome. This well-known travertine deposits, named by the Romans as lapistiburtinus, were used for the construction of important buildings such as the Colosseum (70-80 AD). Since the fundamental studies by Chafetz and Folk (1984), travertines have attracted the interest of the academia and industry as important archives of information about physico-chemical vs. biologically influenced processes of carbonate precipitation in terrestrial conditions, palaeoclimatic and tectonic records and as potential water and hydrocarbon reservoirs.

The detailed core analysis will focus on the identification of the different fabric types, their porosity and permeability and interpretation of the depositional environments. This information will be integrated with observation of travertine facies on the Sapienza University building walls with a walk through the University Campus.

The workshop is divided in three parts: a) an introduction to travertine facies types, precipitation processes and depositional environments; b) travertine core analysis and facies description; and c) a walk across the University Campus buildings.
FIELD TRIPS

Further information available at <www.iasroma2019.org>
Pre-Conference field trips

A1 MICROBIAL CARBONATE RESERVOIRS ARCHITECTURE: FROM DEPOSITIONAL FACIES TO SEISMIC SCALE GEOMETRIES IN THE TRIASSIC OF THE DOLOMITES (ITALY)
Giovanni Gottolini and Roberto Longoni (ENI), Marco Franceschi (University of Padua), Piero Gianolla (University of Ferrara)

A2 TIDAL CHANNELS AND SALTMARSHES OF THE VENICE LAGOON (ITALY): FROM MORPHODYNAMICS TO SEDIMENTARY PRODUCTS
Massimiliano Ghinassi and Andrea D’Alpaos (University of Padua)

A3 VARIED SEDIMENTATION IN A SHORT TIME: THE UPPER MESSINIAN SUCCESSION OF THE NORTH-EASTERN VOLTERRA BASIN (TUSCANY, CENTRAL ITALY)
Marco Benvenuti (University of Florence) and Ivan Martini (University of Siena)

A4 FROM MESSINIAN TO PLEISTOCENE: TECTONIC EVOLUTION AND STRATIGRAPHIC ARCHITECTURE OF THE CENTRAL ADRIATIC FOREDEEP (ABRUZZO AND MARCHE, CENTRAL ITALY)
Claudio di Celma and Alan Pitts (University of Cambridge), Andrea Artoni (University of Parma), Manlio Ghielmi and Giuseppe Serafini (ENI)

A5 LACUSTRINE DEPOSITS OF THE LATE PIACEANZIAN-GEALASIAN L’AQUILA INTERMONTANE BASIN (CENTRAL ITALY)
Domenico Costantino (University of Roma Tre, Italy), Blagio Giacchi (CRN-IGAG, Italy), Elsa Giliozzi (University of Roma Tre, Italy), Marco Nocentini (CRN-IGAG, Italy), Giorgio Pipponzi (USR-L’Aquila, Italy), Marco Spadi (University of L’Aquila, Italy), Marco Tallini (University of L’Aquila, Italy)

A6 LATE QUATERNARY COASTAL DEPOSITS OF WEST SARDEGNA: FROM POCKET BEACHES TO BARRIER-LAGOON SYSTEMS
Stefano Andreucci (University of Cagliari), Daniele Sechi, Giulia Cosso and Vincenzo Pascucci (University of Sassari)

A7 THE INTERPLAY BETWEEN TECTONICS, SALT TECTONICS AND SEDIMENTATION IN FORMING STRATIGRAPHIC SEQUENCES IN THE PERI-IONIAN BASIN, EASTERN CALABRIA
Salvatore Cirelli, Francesco Mutu, Edoardo Perri and Vincenzo Tripodi, Adriano Guido, Mario Borrelli (University of Calabria), Massimo Zecchin and Mauro Caffau (OGS-Trieste), Laurent Gindre

A8 BETWEEN SCYLLA AND CHARYBDIS: TIDAL SEDIMENTARY DYNAMICS OF THE EARLY PLEISTOCENE MESSINA STRAIT (CALABRIA, SOUTHERN ITALY)
Salvatore Critelli, Francesco Muto, Edoardo Perri and Vincenzo Tripodi, Daniela Pastorelli, Adriano Guido, Mario Borrelli (University of Calabria), Massimo Zecchin and Mauro Caffau (OGS-Trieste), Laurent Gindre

Note that there is a pre-conference field trip for early stage researchers. It is described at page 34

Intra-Conference field trips

IM1 VOLCANIC SEQUENCE AND HYDROTHERMALISM AS PLANETARY ANALOGUES: EXAMPLES FROM QUESCENT VOLCANOES IN THE NAPLES AREA (ITALY)
Lucia Marinangeli (University of Chieti-Pescara), Monica Piochi (Osservatorio Vesuviano), Barbara Cavallazzi (University of Bologna), Gianluca Iezzi (University of Chieti-Pescara)

IM2 79 A.D. PYROCLASTIC SUCCESSIONS IN ARCHAEOLOGICAL SITES OF SOMMA-VESUVIUS (SOUTHERN ITALY)
Paola Petrosino and Claudio Scarpati (University of Naples)

IM3 THE MESOZOIC CARBONATES OF THE MALFI COAST: FACIES AND DOLOMITIZATION ACROSS TIME
Alessandro Bonacina and Mariana Parente (University of Naples)

IM4 THE DEPOSITIONAL ARCHITECTURE OF THE PLEISTOCENE DEPOSITS OF THE ROMAN BASIN
Salvatore Milli, Daniel Tontori (Sapienza University of Rome), Mattia Marini (University of Milano)

IM5 EROPTION AND EMBLACEMENT MECHANISMS OF PYROCLASTIC SEDIMENTS: EXAMPLES FROM THE VULSINI VOLCANOES
Daniele M. Palladino and Gianluca Sottili (University of Sassari)

IM6 - SABELLARIA BIOCONSTRUCTIONS AND THEIR PILIO-PLEISTOCENE SUBSTRATUM ALONG THE SOUTHERN LATIUM COAST (TOR CALDARA, ANZIO)
Massimo Moretti and Stefania Lisco (University of Bari, Italy), Maria Flavia Gravina (University of Tor Vergata, Rome, Italy), Marco Brandano and Laura Tomassetti (Sapienza University of Rome, Italy)

Post-Conference field trips

Francesco Dela Pierre, Luca Martire and Marcello Natalicchio (University of Torino)

B2 CONTROL EXERTED BY COLLISIONAL TECTONICS ON BASIN TOPOGRAPHY AND DEPOSITIONAL STYLES: THE TERTIARY PIEDMONT BASIN (TPB) IN THE ALPS-APENNINES JUNCTION (NW ITALY)
Andrea Di Giulio and Chiara Amadori (University of Pavia), Fabrizio Felletti and Mattia Marini (University of Milano), Marco Patacci (University of Leeds, UK), Massimo Rossi (ENI)

B3 FLUID EXPULSION IN ACCREITIONARY WEDGES: WHAT CAN WE LEARN FROM MIocene SLEEP CARBONATES (EMILIA AND TUSCAN APENNINES, ITALY)
Daniela Fontana, Stefanfo Conti, Claudio Argentino and Chiara Fiorenzi (University of Modena and Reggio Emilia)

B4 SEDIMENTARY ARCHITECTURE OF THE UMBRIA-MARCHE APENNINES (UMA)
Simone Crilli (University of Perugia), Enrico Capezzuoli (University of Florence) and Amalia Spina (University of Perugia)

B5 FOREDEEP TURBIDITES OF THE NORTHERN AND CENTRAL APENNINES: MARNOSO-ARENACEA AND LAGA FORMATIONS - Salvatore Milli (Sapienza University of Rome), Roberto Tinti and Alberto Zizza (University of Parma), Mattia Marini (University of Milano); Massimiliano Mocatelli (CRN-IGAG - Roma)

B6 CENTRAL APENNINES AND ITS EARTHQUAKES: FROM SEDIMENTOLOGY AND ACTIVE TECTONICS TO SEISMIC MICROZONATION STUDIES
Chiara D’Ambroggi (Servizio Geologico d’Italia – ISPRA), Emanuela Falciucci (INGV), Gian Paolo Cavinato (CRN-IGAG), Stefano Gori (INGV), Marco Mancini (CRN-IGAG), Giovanni Monegato (CRN IGGE), Cristina Muraro (Servizio Geologico d’Italia – ISPRA), Giancarlo Scardia (Universidade Estadual Paulista, Brazil)

B7 PALEOCEAN TO QUATERNARY STRATIGRAPHIC EVOLUTION OF MAIELLA CARBONATE PLATFORM (CENTRAL APENNINES); FROM GEOLOGICAL AND ARCHAEOLOGICAL EVENTS TO THE POTENTIAL CARBONATE RESERVOIR
- Marco Brandano, Laura Tomassetti, Irene Cornacchia (Sapienza University of Rome), Luis Pomar (University of Balearic Islands, Spain), Silvano Agostini, (Soprintendenza Archeologia dell’Abruzzo)

B8 MESOZOIC CARBONATES FROM WESTERN SICILY
Pietro Di Stefano, Simona Todaro and Vincenzo Randazzo (University of Palermo) and Daniela Ruberti (Campania University)

Further information available at <www.iasroma2019.org>
### A1 - Microbial carbonate reservoirs architecture: from depositional facies to seismic scale geometries in the Triassic of the Dolomites (Italy)

**3 days, 450€ Venice (7th) to Rome (9th)**

**Leaders:** Giovanni Gattolin, Roberto Longoni (Eni Upstream and Technical Services), Marco Franceschi (University of Padua, Italy) and Piero Gianolla (University of Ferrara, Italy)

**Contacts:** giovanni.gattolin@eni.com; marco.franceschi@unipd.it

<table>
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<tr>
<th><img src="image1.png" alt="Image" /> Line drawing and facies mapping of the Mt. Feudo transect exposing a carbonate platform to basin transition (Gattolin et al., 2009 and Preto et al., 2011).</th>
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Carbonate platforms represent economically significant targets for hydrocarbon exploration and production. Such types of reservoirs are liable to display a large variability in their characteristics, affecting both performance and economic viability, hence, outcrop analogs can provide key information for their interpretation in the subsurface. Microbial carbonate platforms, rare today, are common in the Paleozoic and Mesozoic record when they reached considerable size and developed unique and characteristic facies associations and depositional geometries. They form giant reservoirs e.g. in the Paleozoic of the Pre-Caspian area or in the Cenozoic of the Far East. This field-trip will be held in the Dolomites that feature a collection of microbial Triassic carbonate platforms, with the aim of providing a multiscale understanding of such carbonate systems ranging from depositional facies distribution and architecture to their relations with tectonic setting and climate. Participants will have the opportunity to visit exceptional outcrops where platforms can be examined from the facies level up to seismic-scale depositional geometries. The fieldtrip will focus on the Middle-Upper Triassic with key stops in localities such as the Latemar Platform, the Sella Platform and the Cinque Torri-Tofane nearby Cortina d’Ampezzo.

### A2 - Tidal channels and saltmarshes of the Venice Lagoon (Italy): from morphodynamics to sedimentary products

**3 days, 450€ Venice (7th) to Venice (9th)**

**Leaders:** Massimiliano Ghinassi and Andrea D’Alpaos (University of Padua, Italy)

**Contacts:** massimiliano.ghinassi@unipd.it; andrea.dalpaos@unipd.it

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<th><img src="image2.png" alt="Image" /> Saltmarshes and meandering tidal channels of the Venice Lagoon</th>
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Venice and its lagoon are registered in the UNESCO World Heritage List of sites of outstanding universal value and offer an outstanding example of coexistence between human activities and natural processes. The Venice Lagoon represents an unique laboratory to investigate accumulation of saltmarshes and tidal-channel deposits under variable rates of subsidence and sediment supply. The most naturally preserved areas of the northern lagoon will be visited during this trip. These areas are characterized by low (i.e. 2.0 mm/yr) subsidence rate, which is mainly balanced by clastic sedimentation. Saltmarshes, tidal flats, tidal creeks and channels will be visited. Sediment-peels of cores recovered from these different depositional sub-environments will be shown during the trip, and their characteristics will be discussed in terms of sedimentary processes and dynamics.

Further information available at <www.iasroma2019.org>
### A3 - Varied sedimentation in a short time: the Upper Messinian succession of the north-eastern Volterra Basin (Tuscany, Central Italy)

**2 days, 300€ Florence (8th) to Rome (9th)**

**Leaders:** Marco Benvenuti (University of Florence, Italy), Ivan Martini (University of Siena)

**Contacts:** ma.benvenuti@unifi.it; martini.ivan@unisi.it

The field trip aims at illustrating the complex deposition occurred in the north-eastern portion of the Volterra Basin between 5.5 and 5.3 Ma. The succession exposed in the Cerri Bassi quarry and surrounding areas, includes terrigenous fluviodeltaic-lacustrine sediments, restricted marine primary evaporites and thermogenic continental carbonates. The succession, bearing a thin tephra dated at 5.51 Ma, will be discussed for specific sedimentological aspects such as: 1) delta-front density-stratified flow expanding on a lake bottom; 2) fluvial feeder dominated by a discontinuous regime of discharge and high sediment supply rates; 3) relation between a thermal-spring-related travertine mound and an adjacent slope-alluvial system; 4) cyclic selenite gypsum deposition. The sedimentary events will be discussed in the frame of a syn-depositional local tectonic control acting during the later stages of the Messinian Salinity Crisis.

### A4 - From Messinian to Pleistocene: tectonic evolution and stratigraphic architecture of the Central Adriatic Foredeep (Abruzzo and Marche, Central Italy)

**4 days, 500€ Rome (6th) to Rome (9th)**

**Leaders:** Claudio Di Celma, Alan Pitts (University of Camerino, Italy); Andrea Artoni (University of Parma, Italy); Manlio Ghielmi (Eni S.p.A.); Giuseppe Serafini (Eni S.p.A.)

**Contacts:** claudio.dicelma@unicam.it; giuseppe.serafini@eni.com

The Central portion of the Periadriatic Basin is a N-S oriented foreland basin system associated to the Central Apennine Outer Orogenic Wedge. This system stretches along the Marche and Abruzzi regions and is an excellent example of an evolving mountain chain and associated deep-marine to fluvial-alluvial foredeep and wedge-top basins system. This 3 and a half-day trip has been designed to give an overview of the stratigraphic architecture and evolutionary steps of the basin by integrating surface and subsurface datasets. It affords a fine west to east transect through the Messinian-Pleistocene basin fill in Abruzzo and Marche, where outcrops allow a close examination of sedimentary facies and architecture of depositional systems. The basin fill succession includes turbidites, coarse-grained submarine canyon fills and shallow-water depositional settings. The analysis of facies architecture and discontinuity surfaces will allow the attendees to understand the relative role of climate, sediment supply, and thrust front propagation inside the foreland basins system as several factors controlling the stratigraphic record.

Further information available at [www.iasroma2019.org](http://www.iasroma2019.org)
### A5 - Lacustrine deposits of the late Piacenzian-Gelasian L’Aquila intermontane basin (Central Italy)

**2 days, 180€ Rome (8th) to Rome (9th)**

**Leaders:** Domenico Cosentino (University of Roma Tre, Italy), Biagio Giaccio (CNR-IGAG, Italy), Elsa Gliozzi (University of Roma Tre, Italy), Marco Nocentini (CNR-IGAG, Italy), Giorgio Pipponzi (USRC-L’Aquila, Italy), Marco Spadi (University of L’Aquila, Italy)

**Contacts:** domenico.cosentino@uniroma3.it; elsa.gliozzi@uniroma3.it

The field trip will visit the lacustrine deposits of one of the oldest intermontane basins of Central Italy: the tectonically active L’Aquila Basin. This sedimentary basin developed during the late Piacenzian-Gelasian syn-rift stage that affected Central Italy in a post-orogenic tectonic phase. Deep lacustrine deposits, consisting of massive and/or thinly laminated white calcareous silt (Limni di San Nicandro Auct.) with tephra layers, characterize the stratigraphic succession of this intermontane basin. A four *Caspiocypris* species-flock (Ostracoda), together with sponge spicules and molluscs, define the fossil content of the lacustrine deposits of L’Aquila Basin. A shallowing upward trend is recognizable in the lacustrine deposits that crop out in the Poggio Picenze-Castelnuovo area. In the L’Aquila Basin, a complete facies tract from deep lacustrine facies (e.g., San Nicandro Fm.) to subaerial slope deposits (e.g., Valle Valiano Fm.), through well-developed delta and coastal facies (e.g., Petogna and Bominaco), defines the late Piacenzian-Gelasian sedimentary succession of this ancient lacustrine basin.

### A6 - Late Quaternary coastal deposits of West Sardinia: from pocket beaches to barrier-lagoon systems

**3 days, 380€ Alghero (7th) to Rome (9th)**

**Leaders:** Stefano Andreucci (University of Cagliari, Italy), Daniele Sechi (University of Sassari, Italy), Vincenzo Pascucci (University of Sassari, Italy), Giulia Cossu (University of Sassari, Italy)

**Contacts:** sandreu@unica.it; dasechi@uniss.it

The field trip will visit stunning exposures along the West coast of Sardinia island. Pocket beaches dominated by sand-and gravel shallow marine deposits and intertidal algal bindstones along with well-developed sandy strandplain and barrier-lagoon systems will be examined. Field evidence, existing published information and novel Luminescence dates will provide many opportunities for discussing climate and sea-level variations that have influenced the evolution of West Sardinia since the penultimate Interglacial stage (MIS 7).

First day: we will visit outcrops along the coast from Alghero to Bosa to examine MIS 5 pocket beaches and strandplain systems dominated by sandy-gravelly shallow marine deposits, intertidal algal bindstones, coastal dunes and colluvial/alluvial bodies. Overnight stay in Bosa.

Second day: A single stop (San Giovanni di Sinis) to visit the most complete Pleistocene succession of West Sardinia where impressive spit and barrier-lagoon systems crops out. Overnight stay in Alghero.

Third day: A single stop (Rena Majore) to examine a small-incised valley succession characterized by coastal apron-fan (debris-flows and water-flows) systems resting on a pocket beach. There will be opportunities and time for swimming in a marvellous sea.

Further information available at [www.iasroma2019.org](http://www.iasroma2019.org)
A7 - The interplay between tectonics, salt tectonics and sedimentation in forming stratigraphic sequences in the peri-ionic basin, Eastern Calabria

3 days, 250€ Lamezia Terme (7th) to Rome (9th)

Leaders: Salvatore Critelli, Francesco Muto, Edoardo Perri, Vincenzo Tripodi, Adriano Guido, Mario Borrelli (University of Calabria, Italy), Massimo Zecchin, Mauro Caffau (OGS Trieste, Italy), Laurent Gindre-Chanu

Contacts: salvatore.critelli@unical.it

The Crotone-Rossano Basins are the onshore equivalents of the larger Neogene/Quaternay Ionian basin, developed in the frame of the estward migration of the Mesomediterranean microplate, which led to the subduction of the Ionian lithosphere and the spreading of the Tyrrenhian back-arc Basin (Central Mediterranean). The fieldtrip focuses on the main features of the Neogene basin-fill successions and their close relations with synsedimentary tectonics and salt tectonics. The basal transgression consists of a siliciclastic wedge passing from fluvial strata to deep-marine turbidites, followed by a thick evaporite sequence, including sulphate and halite salts (often forming diapirs), recording the Messinian salinity crisis. Moreover, late Messinian compressional tectonics controls the basinal architecture leading to regional unconformities whereas post-Messinian sedimentation is mainly controlled by extensional tectonics and sea-level changes.

A8 - Between Scylla and Charybdis: Tidal sedimentary dynamics of the Early Pleistocene Messina Strait (Calabria, southern Italy) based on its modern analogue

3 days, 520€ Lamezia Terme (7th) to Rome (9th)

Leaders: Sergio G. Longhitano (University of Basilicata, Italy), Domenico Chiarella (Royal Holloway University, London), Marcello Gugliotta (Chiba University, Japan)

Contacts: sergio.longhitano@unibas.it

During the Early Pleistocene, the Messina Strait between Sicily and Calabria was a ca. 10-15-km-wide and 40-km-long, tide-dominated marine passageway, with a sedimentary dynamics analogous to its modern and narrower counterpart. Today, 250-m-thick strait-fill strata crop out on the two opposite margins (Scylla and Charybdis) of the modern strait, preserving the sedimentary record of a variety of processes and environments and their feedback with a dominant tidal dynamics.

During this 3-days-long field trip, attendances will be introduced to the complex tidal dynamics of tidal straits and the erosional/depositional phenomena resulting from tidal flow convergence/divergence and consequent tidal amplification. Participants will be familiarized with typical strait-center, strait-end and strait-margin facies and on the architectures of strait-axis tidal cross-strata complexes, well exposed in a number of easily-accessible sections.

During the visit at the various stops, direct linkages between the observed sedimentary facies and the modern tidal dynamics of the present-day Messina Strait will be constantly considered, aiming at promoting open-minded, critical discussions on the sedimentary dynamics of the ancient Messina passage.
**INTRA-CONFERENCE FIELDTRIPS**

### IM1 – Volcanic sequence and hydrothermalism as planetary analogues: examples from quiescent volcanoes in the Naples area (Italy)

**1 day (Thursday, Sept. 12) 100€ Rome to Rome**

**Leaders:** Lucia Marinangeli (University G. d’Annunzio of Chieti, Italy), Monica Piochi (Osservatorio Vesuviano, Istituto Nazionale di Geofisica e Vulcanologia, Naples, Italy), Barbara Cavalazzi (University of Bologna, Italy), Gianluca Iezzi (Università G. d’Annunzio of Chieti, Italy)

**Contacts:** lucia.marinangeli@unich.it; monica.piochi@ingv.it

The field trip focuses on pyroclastic deposits of the Campi Flegrei volcanisms, plus its on-going hydrothermal activity (CO$_2$ and S-rich water vapor). This activity can reappraise planetary environments. We will observe spectacular outcrops of deposits across the Campanian Ignimbrite and Neapolitan Yellow Tuff volcanism, dated back at 40 and 15 kyrs. Sedimentological, textural, mineralogic, and petrographic features from primary origin and exceptional secondary hydrothermal transformations of these deposits will help linking and favor different perspective on interpretation of extra-terrestrial planetary rocks.

The itinerary includes a trip through the solfataric landscapes developed on the Solfatara volcanic structures to observe the acid sulfate hydrothermal system and discuss its potentiality as analogue to host life in other planets. The field trip will end with a walk to the Vesuvius summit to observe the most famous volcanic cone and its most recent volcanic sequence while enjoying a wonderful view of the Gulf of Naples.

### IM2 – 79 A.D. pyroclastic successions in archaeological sites of Somma-Vesuvius (southern Italy)

**1 day (Thursday, Sept. 12) 120€ Rome to Rome**

**Leaders:** Paola Petrosino and Claudio Scarpati (University of Naples Federico II, Italy)

**Contacts:** paola.petrosino@unina.it; claudio.scarpati@unina.it

The field trip focuses on field features of pyroclastic deposits in two archaeological sites of the perivolcanic area of Vesuvius. We will use deposit characteristics to discuss transport and depositional mechanisms of Plinian events. The whole sequence of the pyroclastic deposits of the well-known 79 A.D. eruption will be observed and described at Pompeii or Herculaneum and Oplontis (a patrician villa located in the Torre Annunziata neighbourhood, also known as Villa di Poppea) archaeological excavations. The 79 AD sequence starts with pyroclastic fall deposit emplaced by the sustained column phase of the Plinian eruption embedded to minor pyroclastic density current deposits. Later pyroclastic currents aggraded massive to stratified deposits showing vertical and lateral facies variations. Both the sites offer the possibility to investigate the relationship between the types of pyroclastic deposits and their effects on Roman buildings and victims, and starting from the respective destructive power, supply some hints on present volcanic hazard assessment. Moreover, both the sites will put the visitors in touch with the life in the Vesuvian area during Roman age.

Further information available at <www.iasroma2019.org>
### IM3 - The Mesozoic carbonates of the Amalfi Coast: facies and dolomitization across time

**1 day (Thursday, Sept. 12) 120€ Rome to Rome**

**Leaders:** Alessandro Iannace, Mariano Parente (University Federico II of Naples, Italy)  
**Contacts:** aleianna@unina.it

The fieldtrip aims at illustrating contrasting dolomitization styles affecting the Norian to Upper Cretaceous shallow water carbonate succession along the Amalfi Coast, in one of the most beautiful scenarios of the Mediterranean Sea. Along with the field examples of various dolomitization and diagenetic processes (early stratabound, late shallow burial, fracture-related dolomitization, evaporite silicification), the main carbonate platform biofacies of the Mesozoic will be shown, which are good analogues for coeval successions of the eastern Mediterranean and the Middle East. Geochemical data, both as a stratigraphic and diagenetic tool, will be discussed, as well as mechanical stratigraphy results gathered in calcareous-dolomitic Cretaceous successions in a perspective of reservoir characterization.

![The Upper Triassic dolomite cliffs at Cetara](image)

### IM4 - The depositional architecture of the Pleistocene deposits of the Roman Basin

**1 day (Thursday, Sept. 12) 50€ Rome to Rome**

**Leaders:** Salvatore Milli, Daniel Tentori (Sapienza University of Rome, Italy); Mattia Marini (University of Milan, Italy)  
**Contacts:** salvatore.milli@uniroma1.it; mattia.marini@unimi.it

The Roman Basin represents one of the extensional basins, developed starting from the Late Pliocene along the central sector of Latium Tyrrenian margin. The sediment filling this basin were transported and deposited by the Tiber river and its tributaries and were attributed to fluvial, coastal, deltaic and shelf depositional systems. Several studies suggest that stratigraphic and depositional architecture the Roman Basin is the result of the close interaction among tectonic uplift, volcanic activity, and glacio-eustatic sea-level fluctuations.

The aims of this field trip will be the sedimentology and the sequence stratigraphy of these deposits and how they are organized in relation to the interaction between the three main processes mentioned above.

![Fluvial and beach gravel deposits of the Ponte Galeria Sequence. Below: Mammal site (the Polledrara di Cecanibbio) within the fluvial deposits of the Ponte Galeria Sequence](image)

Further information available at [www.iasroma2019.org](http://www.iasroma2019.org)
### IM5 - Eruption and emplacement mechanisms of pyroclastic sediments: examples from the Vulsini volcanoes

**1 day (Thursday, Sept. 12) 60€ Rome to Rome**

**Leaders:** Danilo M. Palladino and Gianluca Sottili (Sapienza University of Rome, Italy)

**Contacts:** danilo.palladino@uniroma1.it; gianluca.sottili@uniroma1.it

The Vulsini Volcanic District is the northernmost manifestation of the Quaternary, peri-Tyrrhenian, potassic magmatism of the Roman Province (Central Italy). It is well known for the variety of relatively young volcanic landforms and the excellent exposures of eruption products that encompass a full spectrum of eruptive styles, both effusive and explosive. The fieldtrip aims at illustrating key field observations (i.e., grain size, componentry, textures) on pyroclastic deposits to reconstruct mechanisms of eruption, transport and deposition of pyroclastic sediments from fallout and flow processes. Particular emphasis will be given to the dynamics of Plinian and caldera-forming explosive eruptions, including data collection for the quantitative evaluation of the eruption parameters magnitude (volume) and intensity (mass eruption rate, column height), relevant for volcanic hazard assessment.

![Lake Bolsena and Latera Caldera, in the Vulsini Volcanic District](image)

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### IM6 -- Sabellaria bioconstructions and their Plio-Pleistocene substratum along the southern Latium coast (Tor Caldara, Anzio) 1 day (Thursday, Sept. 12) 30€ Rome to Rome

**Leaders:** Massimo Moretti and Stefania Lisco (University of Bari, Italy), Maria Flavia Gravina (University of Tor Vergata, Rome, Italy), Marco Brandano and Laura Tomassetti (Sapienza University of Rome, Italy)

**Contacts:** laura.tomassetti@uniroma1.it; ste.lisco@hotmail.it

The field trip winds through beaches and cliffs of the southern Latium coast. It is centered on some unusual present-day worm reefs that crop out in the Tor Caldara beach (a). Sabellaria alveolata is a sedentary annelid polychaete that builds hummocks, mounds and actual bioconstructions with a structure similar to honeycombs; the worm captures sands with specific grain-size forming intriguing arenaceous tubes. The field trip will show also some Plio-Pleistocene marine successions that crop out in the Anzio area. The older marine units are exposed along the cliffs that contain also the remains of the Imperial Nerone Villa (b). Here, regular metric clinoforms are locally cut by slide scars. The younger Pleistocene deposits form a regressive marine succession (from shelf shales to backshore aeolian sandstones) that is visible close to the Tor Caldara locality. The uppermost portion of this succession crops out in the Martian landscape of the Natural Reserve of Tor Caldara, where sulfuric fluids coming from the adjacent Solfatara, paints the Pleistocene deposits with astonishing colors (c).

![Above: a Sabellaria alveolata mound. Middle: The Nerone Villa remains and the clinoforms of the Pleistocene deposits. Below: Pleistocene transitional deposits coloured by sulfuric fluids.](image)

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Further information available at [www.iasroma2019.org](http://www.iasroma2019.org)
POST-CONFERENCE FIELDTRIPS

B1 - The Messinian sediments of the Tertiary Piedmont Basin: a record of the Messinian Salinity Crisis and of circulation of gas-rich fluids

**Leaders:** Francesco Dela Pierre, Luca Martire, Marcello Natalicchio (University of Torino, Italy)
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The fieldtrip aims at illustrating the stratigraphic architecture of the Upper Messinian sediments including the record of the Messinian salinity crisis (MSC) and the effects of circulation of methane-rich fluids through the sedimentary column before and during the crisis itself. The succession includes: Tortonian and lower Messinian slope marls and organic-rich shales which record progressively more restricted conditions heralding the advent of the MSC and contain CH4-derived carbonates including Lucinid-rich chemohemers and a wide array of fossil-free stratabound and cylindrical concretions; primary evaporites e.g. selenitic and cumulate gypsum interbedded with shales and marls deposited during the first phase of the MSC (5.97-5.60 Ma); clastic gypsum sediments and mass wasting deposits, including both gypsum blocks and masses of CH4-derived carbonates, representing the product of the second phase of the MSC (5.60-5.55 Ma). The products of circulation of gas-rich fluids during the Messinian in older (Oligocene), coarse-grained clastic sediments will also be shown which resulted in huge masses of strongly cemented sediments crossed by a complex network of polyphase dykes and carbonate-filled veins.

B2 - Control exerted by collisional tectonics on basin topography and depositional styles: the Tertiary Piedmont Basin (TPB) in the Alps-Apennines Junction (NW Italy)

**Leaders:** Andrea Di Giulio and Chiara Amadori (University of Pavia, Italy); Fabrizio Felletti and Mattia Marini (University of Milan, Italy); Marco Patacci (University of Leeds, UK); Massimo Rossi (Eni Upstream & Technical Services, Italy)
**Contacts:** fabrizio.felletti@unimi.it; andrea.digiulio@unipv.it

The field trip illustrates the Late Eocene-Miocene changes in depositional style of the infill of the Tertiary Piedmont Basin (TPB) in a stratigraphic perspective, relating them to major paleogeographic reorganization linked to Alpine and Apennine tectonics. A variety of depositional systems will be examined including alluvial, marginal marine, shelf and intra-slope and basin-plain turbidites. Outcrop observations will be integrated with photogrammetric models and seismics from time-equivalent buried examples from the area. Topics covered include: 1) relationships between morphostructural elements and origin of classical sequence boundaries driven by relative sea level falls vs. hinged-margin drowning unconformities driven by hinged accommodation on oversteepened shelf margins; 2) morphologies of deep-water erosion; 3) controls of basin morphology on development of turbidite facies and architecture; 4) petrography of turbidite sandstones and mudstones and implications for origin and source of mud-grade sediments; 5) implications for characterization of analogue plays and reservoirs.

Further information available at <www.iasroma2019.org>
**B3 - Fluid expulsion in accretionary wedges: what can we learn from Miocene seep carbonates (Emilia and Tuscan Apennines, Italy)**

| Leaders: Daniela Fontana, Stefano Conti, Claudio Argentino, Chiara Fioroni (University of Modena and Reggio Emilia, Italy) |
| Contacts: daniela.fontana@unimore.it; stefanoconti@unimore.it |

The field trip will focus on key-outcrops of seep-carbonates representative of a long history of seepage and dynamic conditions in the Miocene wedge-top and inner foredeep of the Emilia and Tuscan Apennines (Sasso d’Andrea and Palazzuolo outcrops). Carbonates form isolated bodies up to 250 m wide and 30 m thick with stratiform and pinnacular geometries, surrounded by meter-sized satellite blocks. Recurring facies include abundant conduits and drusy-like cavities associated with breccias. Articulated chemosynthetic fauna (Lucinid and Vescomid) locally occur, often in life position. The peculiar geochemistry of the seep-carbonate (Sr isotopes, REE and Mo, U enrichments) will also be discussed in terms of different fluid sources and dynamic seepage conditions. The outcrops show several analogies with modern seep systems in similar structural context, in terms of dimension and geometry of authigenic bodies and their spatial distributions. This comparison allows to outline an evolutive model of seepage on accretionary wedge and provides constraints useful for a more accurate interpretation of both ancient and modern seep systems.

**B4 - Sedimentary Architecture of the Umbria-Marche Apennines (UMA)**

| Leaders: Simonetta Cirilli (University of Perugia, Italy); Enrico Capezzuoli (University of Florence, Italy); Amalia Spina (University of Perugia, Italy) |
| Contacts: simonetta.cirilli@unipg.it; amalia.spina@unipg.it |

The UMA are part of the peri-Mediterranean system of Alpine-Apennines chains formed after the Africa and Europe plate collision. The UMA record the evolution of the Tethys Ocean starting from the early Mesozoic. The proposed geological itinerary connects some impressive outcrops spanning from shallow-to deep marine successions developed on a passive margin.

The field trip will focus on sedimentary facies architecture and evolution of the depositional systems visiting three key sites:

1) the Lower Jurassic (Sinemurian-Pliensbachian) cyclothem facies of the shallow-water carbonate platform (Calcarea Massiccio Fm, in the Frasassi area);
2) the lower Toarcian organic rich marly facies (T-OAE) (Marne del Monte Serrone Fm, in the type section);
3) the deep-marine facies bracketing the K/Pg boundary in the well-known and famous section of the Bottaccione Gorge (Gubbio).

Further information available at <www.iasroma2019.org>
### B5 - Foredeep turbidites of the Northern and Central Apennines: Marnoso-arenacea and Laga Formations

**Leaders:** Salvatore Milli (Sapienza University of Rome, Italy); Roberto Tinterri, Alberto Piazza (University of Parma, Italy); Mattia Marini (University of Milan, Italy); Massimiliano Moscatelli (CNR-IGAG, Istituto di Geologia Ambientale e Geoingegneria, Rome, Italy)

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Turbidite deposits developed in structurally confined basins show depositional elements as channels, lobes, and basin plains featuring highly variable facies, complex geometries and characteristic hierarchies, which can be analysed only through a detailed examination of outcrops and the measure of several stratigraphic-sedimentological sections. To this purpose exceptionally good exposures are required. The Miocene foredeep turbidite deposits of the Marnoso-arenacea and Laga Formations satisfy this condition and provide a large amount of quantitative information. In this field trip we will discuss about the origin, provenance and evolution of the flows related to these turbidite successions as well as the main facies and physical stratigraphic features. At the same time we will also discuss about the relationships between tectonic and sedimentation of these basins in the context of the northern and Central Apennines Miocene foreland basin system.

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### B6 - Central Apennines and its earthquakes: from sedimentology and active tectonics to seismic microzonation studies

**Leaders:** Chiara D’Ambrogi (Servizio Geologico d’Italia – ISPRA), Emanuela Falucci (Istituto Nazionale di Geofisica e Vulcanologia, Italy), Gian Paolo Cavinato (CNR IGAG, Italy), Stefano Gori (Istituto Nazionale di Geofisica e Vulcanologia, Italy), Marco Mancini (CNR IGAG, Italy), Giovanni Monegato (CNR IGG, Italy), Cristina Muraro (Servizio Geologico d’Italia – ISPRA), Giancarlo Scardia (Universidade Estadual Paulista, Brazil)

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The Central Apennines represents a wonderful record of a still active complex stratigraphic and structural history, as testified by recent earthquakes (L’Aquila 2009, Mw 6.3; Amatrice-Norcia 2016, Mw 6.5). Normal faults activity contributed to the formation of tectonic basins that hosted continental depositional sequences, which recorded the long-term traces at surface of large earthquakes. Moreover, local seismic amplification as result of impedance contrasts of soft sediments on hard rocks and liquefactions have been observed. The field trip will illustrate examples of earthquake-induced effects due to the recent seismic crises, in relation to the local stratigraphic and structural setting. The main steps of the geological evolution of Central Apennines, from Jurassic up to the Present, will be investigated which will help define contrasting responses to earthquakes between the cover terrains and the seismic bedrock. Regional uplift and active faulting that interplayed with Quaternary climatic changes to carve the mountain chain into its present shape, feeding continental stratigraphic sequences will be illustrated. The effects of recent earthquakes on towns and villages will be described considering the contribution of sediments characterization and results of the advanced seismic microzonation studies.

Further information available at [<www.iasroma2019.org>](http://www.iasroma2019.org)
**B7 - Paleocene to Quaternary stratigraphic evolution of Majella Carbonate Platform (Central Apennines); From geological and archeological events to the potential carbonate reservoir**

**2 days, 190€ Rome (14th) to Rome (15th)**

**Leaders:** Marco Brandano, Laura Tomassetti, Irene Cornacchia (Sapienza University of Rome, Italy); Luis Pomar (University of the Balearic Islands); Silvano Agostini (Soprintendenza Archeologia dell’Abruzzo, Italy)

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Excellent continuous exposures of Paleocene to Miocene carbonate ramp deposits along the Majella NNW flank (e.g. Orfento and S. Bartolomeo valleys), allow to investigate facies changes both along and across the ramp environment. Relationships among sedimentary structures and depositional processes, among stratigraphic architecture and syn/post-depositional tectonics are investigated and discussed. Moreover, extensive well known bitumen shows, found both along fractured zones and in the rock matrix, are analysed and possible controlling factors are discussed.

The Majella Mountain is also characterized by several archaeological, historical and artistic testimonies dating back to the earliest prehistory. They consist of Paleolithic open air sites, Neolithic and metal age settlements.

The field trip will provide an overview of the carbonate sedimentology and stratigraphy of the Mesozoic of western Sicily.

**B8 - Mesozoic carbonates from western Sicily**

**3 days, 600€ Rome (14th) to Palermo (16th)**

**Leaders:** Pietro Di Stefano, Simona Todaro, Vincenzo Randazzo (University of Palermo, Italy); Daniela Ruberti (University of Campania L. Vanvitelli, Italy)

**Contacts:** simona.todaro@unipa.it

The field trip will provide an overview of the carbonate sedimentology and stratigraphy of the Mesozoic of western Sicily.

In particular, the excursion will focus on:
- A transect across a Norian-Rhaetian rimmed carbonate platform;
- The Triassic / Jurassic boundary in peritidal facies;
- The demise of the Lower Jurassic carbonate platforms and the Rosso Ammonitico sedimentation;
- Mass Transport Deposits in a tectonically-controlled Cretaceous escarpment.

Further information available at [www.iasroma2019.org](http://www.iasroma2019.org)
VENUE

The Meeting will be held at the Sapienza University of Rome. The campus (Città Universitaria) lecture rooms offer all the facilities needed for a such large conference. It is located in center of Rome, a few hundred meters far from the main railway stations (Roma Termini and Roma Tiburtina) where shuttle trains and buses from international airports arrive. Countless hotels and tourist facilities are present nearby, as well as along the subway lines, whose stations are located at walking distance from the campus. Within the university campus there are a church, a police station, a post office a bank with ATM, and the main hospital of the town few hundred meters far.

ACCOMMODATION

The city of Rome offers a wide range of accommodation ranging from very cheap to very expensive. We offer the possibility of booking through secretariat@iasroma2019.org. Otherwise you may book by yourself as that the number of hotels in Rome is countless; only in one km range from Sapienza University there are more than 500 accommodation structures. The choice is huge, and it is easy to find an accommodation according to personal requirements in term of price, facilities and position. Most of the accommodation places recommended are located in the city center, within a walking distance to the university. Since Rome is a touristic city it is strongly recommended to make an early hotel booking.

REACHING ROME

Fiumicino International Airport (FCO) is the main Italian gateway with direct flights from the most relevant cities all over the world, while Ciampino Airport (CIA) is a relevant hub for low-cost flights.

From Fiumicino and Ciampino airports to downtown Rome there are bus connections and train shuttle leaving every 30 minutes (duration 35’, 14 €). Train shuttle arrives at Termini railway station, one km far from the Meeting venue at Sapienza University (see figure below).

Similarly, almost all Italian and European destinations are connected to Rome by trains stopping at Termini and Tiburtina train stations.

REACHING SAPIENZA UNIVERSITY

Termini and Roma Tiburtina railway stations and nearby Sapienza University are conveniently served by an efficient network of bus, trams, subways, and taxis.

The nearest subway stations are Policlinico and Castro Pretorio (both Line B). From Termini and Tiburtina train stations you may also reach Sapienza University on foot, by a 15’ and 25’ walk, respectively.
ACTIVITIES FOR EARLY CAREER SCIENTISTS (AND OTHERS AS WELL)

Following the activities organized by IAS Early Career Scientists Committee in Quebec and Toulouse meetings, in Rome we will offer a wide range of activities (open to all but mainly targeted to scientists at the beginning of their career).

Babysitting
The IAS organization cares about sedimentology as well as family, thus it would be proud to give support to all the participants and their little kids seeking for a babysitting service for all the duration of the congress. If need, please contact the IAS organization committee (secretariat@iasroma2019.org) and we will be happy to help you.

ECS workshop: “How to survive to a review”
Although the manuscript has been hardly prepared, although you double checked your English, although you spent many days working on the last figure, the reviewers always have something to complain. It’s a long way to the top... and how to reach it now? What do the reviewers and the editors expect from your work now? How to deal with all the comments and suggestions in a properly way?
Come to the ECS workshop “How to survive to a review”: our speakers will give you all the answers and all the suggestions you need to improve your way to review your manuscripts. The workshop, free of charge, will be held during meeting days during lunch time.

ECS workshop: “How to prepare your CV (and yourselves) for an application”
Websites are full of job opportunities... but now you found the job you have always dreamt. There is only a gap between you and it: the application. How could you show the commission that you are the right man/woman in the right place? Which are the differences between the academical and the industrial world?
Come to the ECS workshop “How to prepare your CV (and yourselves) for an application” and you will find the right way to valorise your job profile for the application you are looking for.
Two technical training workshops will be organised, mainly (but not only) addressed to Early Career Scientists. They will deal with “How to prepare a successful CV” and “how to survive referee”. The workshop, free of charge, will be held during meeting days during lunch time.

ECS corner
Do you want to briefly show your work? Have you got a brilliant idea to share? Are you looking for a job position and do you want to present your competencies through what you are doing? Come to the ECS corner! Launched for the first time in Québec City 2018, the ECS corner is an open space where PhD students and early career scientists have a microphone, a laptop and 5 minutes to interact with the sedimentological community, showing who they are, what they are doing and discuss their data and ideas.
Thus, we are waiting for you there! But, don’t waste time and express your interest to the ECS corner (ECS@iasroma2019.org).

ECS field trip
8th to 9th of September, starting from and returning to Rome, the fieldtrip will be organized by Andrea Di Capua (CNR – Milan), Federica Barilaro (Insubria University, Como), Joanna Pszonka (AGH – Krakow). The aims of the ECS fieldtrip is to bring together the next generation of sedimentologists in an interactive tour across different sedimentological topics. From Viterbo to the north, the fieldtrip will briefly explore the power of volcanically-induced sedimentation, the wonderful world of the microbially-induce precipitation of carbonates in continental settings, and the importance of reading deep-water sedimentary systems in one of the richest areas under the historical point of view. A great opportunity of aggregation and discussion, with a night between good food and thermal bath, is waiting for you! Price: 170€, including transport by bus, a night and a typical Italian dinner, food during the travel. Minimum: 10 participants, Maximum: 25 participants. From Rome to Rome, in time to participate the icebreaker cocktail. Contacts: ECS@iasroma2019.org

Best Poster Prizes
IAS 34th Meeting will award two best poster prizes, one for Student and one for ECS (i.e. post-doc and researchers with less than 7 years from their PhD). Those wishing to volunteer for prizes may contact ECS@iasroma2019.org.

Evening event
An evening event will be organized, not overlapping with the conference dinner, in a pub or other location, to have a friendly, unformal meeting among ECS researchers. Details will be given on the third circular.
EXHIBITION & SPONSORSHIP

If your organisation is interested in becoming a Conference Sponsor and/or in securing an exhibition space in the Meeting venue, please mail us at IASroma2019@uniroma1.it. The following levels of sponsorship have been established:

**SYSTEMS TRACT Sponsorship (20K€)**
- Visibility in all official documents including a logo at plenary sessions
- Dedicated half-a-page in the general program
- Dedicated medium booth
- Free registration for 3 participants at the Meeting

**PARASEQUENCE Sponsorship (10K€)**
- Visibility in all official documents including a logo at plenary sessions
- Dedicated third-of-a-page in the general program
- Dedicated small booth
- Free registration for 2 participants at the Meeting

**STRATA Sponsorship (5K€)**
- Visibility in all official documents including a logo at plenary sessions
- Free registration for 1 participant at the Meeting