

XXI CONGRESS OF THE  
INTERNATIONAL UNION FOR QUATERNARY RESEARCH  
"TIME FOR CHANGE"



THIRD CIRCULAR  
AND  
PROGRAM



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ORGANISED BY



**SAPIENZA**  
UNIVERSITÀ DI ROMA



SCIENTIFIC PATRONAGE



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DEGLI STUDI  
DI MILANO



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DEGLI STUDI  
DI TORINO



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## PRESIDENT'S WELCOME

Welcome to the 21<sup>st</sup> INQUA Congress in Rome

Four years ago, the INQUA International Council accepted the bid of our Italian colleagues to organize the 21<sup>st</sup> INQUA Congress in July 2023 in Rome (Italy). However, soon after the Corona virus started to spread, and the pandemic related major travel and meeting restrictions lasted a number of years. For long, it was unclear if the 21<sup>st</sup> INQUA Congress could be organized in 2023, but together we managed to get the pandemic situation under control and thanks to our highly motivated and very energetic Italian colleagues, we all meet again this summer in Rome, 70 years after the 4<sup>th</sup> INQUA Congress in 1953.

*Time for Change* is the theme of the INQUA Rome 2023 Congress and the Congress program emphasizes the critical role of Quaternary sciences in the debate on the current societal and climate challenges. This summer, about 3000 participants from ca. 100 different countries will present their research and discuss their ideas at the main campus of Sapienza University (Città Universitaria). The XXI INQUA Congress in Rome is the place to be, the place to meet your colleagues, to meet your friends, to meet famous scientists and those that will be future leading scientists in Quaternary research.

Thank you all for your participation,



Thijs van Kolfschoten  
President, INQUA



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## CONGRESS CHAIR'S WELCOME

Dear congress attendees and colleagues,

Benvenuti! – Welcome!

With pride and joy, I join the Organising Committee of the 2023 INQUA Congress in welcoming you at the XXI INQUA Congress in Rome. It seems yesterday when we submitted the bid for hosting the congress back in 2019. We did not expect that time would pass so fast and that we would end up hosting such a large INQUA Congress with nearly 3000 participants from 103 different countries.

I hope you will enjoy the friendly environment of Sapienza University where students will be still around to finish their exams before summer break. The congress returns in Rome 70 years from the IV INQUA Congress in 1953. You will have the opportunity to step the same stairs where Milankovitch entered the “Lettere” faculty to present his theory on astronomical forcing of climate cycles with a speech that was heavily debated (you will learn more in the exhibition we have on this event). Looking at the documents from the 1953 INQUA congress I realized that our discipline has evolved quickly as our way to communicate with each other, but the enthusiasm as well as the willingness to share data and discuss them has remained intact. Maybe the main difference is that in 1953 not many students and ECR were joining the Congress. Today we have a large number of young researchers (almost half of the delegates) that are making their way to Rome to join INQUA2023.

The theme of the Congress “Time for Change” not only emphasize the critical role of Quaternary sciences in contributing the knowledge we need to face current environmental challenges but also enhances the need to change our collaborative work to better communicate our research to the public and influence decision makers with scientifically-based awareness.

Thus, I really hope that this Congress will pave the road for future generations of Quaternary scientists, with respectful and constructive interactions among all different generations of scientists!

Together with the Organising Committee, we wish you all a pleasant and memorable stay in Rome and a Congress that will meet all your scientific expectations.

Best wishes,



Francesco Latino Chiocci  
Chair of the XXI INQUA Congress



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# ORGANISING COMMITTEES

## Local Organising Committee

**Chairperson** Francesco Latino Chiocci (Sapienza University)

**Vice Chairperson** Laura Sadori (Sapienza University)

**Secretary General** Ilaria Mazzini (CNR-IGAG)

**Field Excursions Committee** Emanuela Falcucci (INGV) and Alessandro Maria Michetti (Insubria University)

**Finance Committee** Vincenzo Pascucci (Sassari University)

**Fellowships Committee** Laura Sadori (Sapienza University) and Andrea Zerboni (Milano Statale University)

## Local Committee Members

*Logistics* Alessia Masi and Daniele Casalbore (Sapienza University)

*Website and Apps* Luca Guerrieri and Anna Maria Blumetti (ISPRA)

*Social Media* Kathleen Nicoll (University of Utah) and Guido Stefano Mariani (Cagliari University)

*Patronage* Luca Guerrieri (ISPRA)

*Sponsors and Expo* Fabrizio Lirer (Sapienza University) and Paolo Mozzi (Padova University)

*Relations with Local Institutions* Raffaele Sardella (Sapienza University) and Martina Pierdomenico (CNR-IAS)

*Social Programme* Federico Di Rita and Daniele Spatola (Sapienza University)

*Early Career Researchers* Maria Francesca Ferrario (Insubria University)

*Workshops and Short Courses* Pierluigi Pieruccini (Torino University)

*Outreach* Ilaria Mazzini and Laura Sanna (CNR-IGAG), Annalisa Iadanza (CNR-DSSTTA) and Valerio Ruscito (ISPRA)

*Other members:* Adele Bertini, Alessandra Smedile, Alessandro Vanzetti, Anna Maria Mercuri, Assunta Florenzano, Cecilia Conati, Donatella Magri, Enza Elena Spinapolice, Fabrizio Antonioli, Francesca Bozzano, Franco Vallocchia, Giorgio Manzi, Giovanni Zanchetta, Letizia Di Bella, Mary Anne Tafuri, Matteo Vacchi, Mauro Coltorti, Paolo Carafa, Piero Lionello, Roberta Pini.

## INQUA Executive committee

*President* Thijs van Kolschoten

*Secretary General* Enikő Magyari

*Treasurer* Freek Busschers

*Vice Presidents* Zhengtang Guo, Laura Sadori, Maria Fernanda Sanchez-Goñi and Lynne Quick

*Past President* Allan Ashworth

*ECR Chair* Nivedita Mehrotra

*Secretary* Aritina Haliuc



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MARINE



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## SCIENTIFIC COMMITTEES

### Scientific Programme Committee

**Chairs:** Alessandro Maria Michetti (Insubria University), Giovanni Monegato and Sandro Rossato (CNR-IGG)

#### Commissions Presidents

*CMP-Coastal and Marine Processes*

Sarah Woodroffe (Durham University, UK)

*HABCOM-Humans and Biosphere*

Anupama Krishnamurthy (Institute Francais de Pondichery, IN)

*PALCOM-Palaeoclimates*

Tom Johnson (University of Massachusetts Amherst, US)

*SACCOM-Stratigraphy and Chronology*

Lewis Owen (North Carolina State University, US),

*TERPRO-Terrestrial Processes, Deposits and History*

James Mc Calpin (Geo-Haz consulting, Colorado US)

### Italian Honorary Scientific Committee

Francesco Carraro, Maria Bianca Cita, Mauro Cremaschi, Daniela Esu, Carlo Giraudi, Odoardo Girotti, Giuseppe Orombelli, Maria Rita Palombo, Leonello Serva, Giovambattista Vai

### INQUA Honorary Scientific Committee

Nat Rutter (Canada), John J. Clague (Canada) Allan Chivas (Australia), Margaret Avery (South Africa)

### Scientific Advisory Committee

Abderrezak Djerrab (Algeria), Amel Chakroun (Tunisia), Amit Mushkin (Israel), Asfawossen Asrat (Botswana/Ethiopia), Daniela Kröhling (Argentina), Franck Audemard (Venezuela), Frank Preusser (Germany), Zhengtang Guo (China), Giancarlo Scardia (Brazil), Gilles Lericolais (France), Goran Durn (Croatia), Guzel A. Danukalova (Russia), Ioannis Papanikolaou (Greece), Jin Cheul Kim (South Korea), José Sebastian Carrion (Spain), Jürgen M. Reitner (Austria), Katerina Kouli (Greece), Kristine Asch (Germany), Kyoung-nam Jo (South Korea), Larbi Boudad (Morocco), Ljerka Marjanac (Croatia), Lynda Petherick (New Zealand), Marc Luetscher (Switzerland), María Magdalena Velázquez Bucio (Mexico), Marie-France Loutre (Switzerland), Sokol Marku (Albania), Mehmet Akif Sarıkaya (Turkey), Miloš Bavec (Slovenia), Neil Glasser (UK), Ollivier Vincent (France), Pablo Silva Barroso (Spain), Peter Coxon (Ireland), Petra Jamšek Rupnik (Slovenia), Philip Hughes (UK), Russell Drysdale (Australia), Stefanie Wirth (Switzerland), Takashi Azuma (Japan), Vandana Prasad (India), Yoshihi Saito (Japan), Fawzi Doumaz (Italy).



Mont Blanc Massif, Italy-France

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# SCIENTIFIC PROGRAMME

The final programme of oral and poster sessions is available here:  
<https://inquareoma2023.exordo.com/programme>

There, you will be able to see the programme day-by-day, search for a specific abstract/keyword/author, and read all the submitted abstracts.

Please note that small adjustments related to late withdrawals are still possible.

## CONGRESS APP

The congress app INQUAREOMA2023 will be available on GooglePlay and Appstore few days before the congress opening.



*Detail of the Minerva statue, symbol of Sapienza, by Antonio Martini*

# SCIENTIFIC PROGRAM AT A GLANCE

	9	10	12	13	14	15	16	17	18	19
<b>SUNDAY 9 WEDNESDAY 12 JULY</b>		PCSC1	PCSC1			PCSC1				
<b>THURSDAY 13 JULY</b>		PCW2 PCW4 PCW3		FREE LUNCH		PCW4 PCW3				ICE-BREAKER PARTY
<b>FRIDAY 14 JULY</b>	8:30	WELCOME COFFEE + REGISTRATION	10:30	SESSIONS METIO	13:30	14:30	15:45	16:15	18:15	18:15
		GENERAL ASSEMBLY I		LUNCH	Elsevier NEW Journal launch for QEH	POSTER	COFFEE BREAK	SESS/ONS	EDITORIAL MEETING OF QEH INTIMATE group	ECR ICE-BREAKER PARTY
<b>SATURDAY 15 JULY</b>	8:30	SESSIONS	10:30	SESSIONS	LUNCH	PLENARY LECTURE Carlo Dogliotti	COFFEE BREAK	SESS/ONS	QUAGED editorial meeting COMICS@INQUA: The Quaternary Issue	
				Editorial Board of Quaternary International (QI) Navigating Inqua as an ECR: Inqua structure, funding scheme, the ECR Representatives and community		POSTER	COFFEE BREAK	SESS/ONS	TERPRO	
<b>SUNDAY 16 JULY</b>	8:30	SESSIONS	10:30	SESSIONS	FREE LUNCH	MCW1 MCW4 MCSC3 MCW5 MCW2 MCSC2 PCW1	MCW1 MCW4 MCSC1 MCW5 MCW6	International Council		
<b>MID-CONGRESS FIELD TRIPS</b>										
<b>MONDAY 17 JULY</b>	8:30	SESSIONS	10:30	SESSIONS	LUNCH	PLENARY LECTURE Hai Cheng	COFFEE BREAK	SESS/ONS	HABCOMM BOREAS BOARD ECR business meeting (old - new ECR Reps) AFEQ ONF INQUA Loesa and Palaeogeography Working Group's General Meeting	IC RECEPTION
				Organizing the INQUA-PAGES ECR workshop: the PASES experience Yixuan Zhao (Elsevier) presentation about The Publication Process		POSTER	COFFEE BREAK	SESS/ONS		
<b>TUESDAY 18 JULY</b>	8:30	SESSIONS	10:30	SESSIONS	LUNCH	PLENARY LECTURE Inger Greve Alsos	COFFEE BREAK	SESS/ONS		CONGRESS DINNER
				GEOSCIENCES PROJECT		POSTER	COFFEE BREAK	SESS/ONS	SACCOM Commission Business meeting	
<b>WEDNESDAY 19 JULY</b>	8:30	SESSIONS	10:30	SESSIONS	LUNCH	PLENARY LECTURE Julie Brigham-Grette	COFFEE BREAK	SESS/ONS	PALCOM Commission Business meeting SECS business meeting	
						POSTER	COFFEE BREAK	SESS/ONS		
<b>THURSDAY 20 JULY</b>	8:30	SESSIONS	10:30	SESSIONS	LUNCH	GENERAL ASSEMBLY II	COFFEE BREAK	INQUA Board meeting		
						POSTER	COFFEE BREAK			



# SCIENTIFIC PROGRAMME

## THURSDAY 13

ICE-BREAKER PARTY

18:00

## FRIDAY 14

Registration opens  
WELCOME COFFEE

8.30

9:00-10:00

10:00-12.00

### OPENING CEREMONY and GENERAL ASSEMBLY

Session 10: Visualizing Science – The art of communicatin g science	Session 16: Linking paleoenvironm ental proxies at different scales: potential, problems and limits	Session 24: Fluid venting as a submarine geomorphic process	Session 56: The Palaeolithic of the Americas: population dynamics, behavioral variability and techno- cultural diversity around the Last Glacial Maximum (MIS 2-3)	Session 74: Advances and new challenges in landscape modeling change in the "Anthropocene variability and cultural diversity around the Last Glacial Maximum (MIS 2-3)	Session 80: Magnetostratig raphy and Environmental Magnetism contribution to understand paleoclimatic and paleoenvironm ental changes	Session 107: More than the sum: fault re- ruptures and cumulative damage during seismic sequences	Session 108: Equitable and ethical knowledge production in Quaternary Science	Session 182: From Cores to Code: Data- Model Integration to Improve Reconstruction s and Forecasts of Coastal Change	Session 184: Seismic hazard assessment in populated areas of Latin America: incorporating seismogenic faults	Session 187: Diversity and Inclusion Initiatives in the Quaternary Sciences	Session METIQ PROJECT: the first 1:500.000 Quaternary Map of Italy
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### LUNCH (Elsevier launch of the Journal)

### POSTER (ALL SESSIONS OF THE DAY)

COFFEE BREAK

13.30-14.30

14.30-15.45

15.45-16.15

Session 196: Quaternary sedimentary- basins evolution: controlling factors and implications for future scenarios or past reconstructions	Session 10: Visualizing Science – The art of communicatin g science	Session 16: Linking paleoenvironm ental proxies at different scales: potential, problems and limits	Session 38: Reconciling deformation through Geomorpholog y, Active tectonics and Paleoseismolo gy investigations along the India plate	Session 56: The Palaeolithic of the Americas: population dynamics, behavioral variability and techno- cultural diversity around the Last Glacial Maximum (MIS 2-3)	Session 74: Advances and new challenges in modeling landscape change in the "Anthropocene variability and cultural diversity around the Last Glacial Maximum (MIS 2-3)	Session 41: Late Quaternary desertification, landscape changes, paleoclimate, and human adaptation	Session 78: Subduction zone palaeoseismol ogy	Session 95: Impacts of abrupt climate change on ecosystems, landscapes, and societies through INTEGRATION of Ice-core, MARine and TERrestrial records (INTIMATE)	Session 109: Animals, environments & humans: diverse perspectives from the Quaternary	Session 115: Palaeoenviron mental research in SW Asia: Recent advances & future opportunities	Session 121: The anthropology of climate change	Session 134: How Absolute and How Relative: Challenges and Resolutions Associated with Applying Dating Techniques in the Quaternary period	Session 180: Sedimentary record of past catastrophic coastal flooding (tsunami, storms)
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18.15-19.15

19:30

NORDQUA meeting

INTIMATE group meeting

ECR ICE-BREAKER PARTY!

CMP Commission Business meeting

# SCIENTIFIC PROGRAMME

## SATURDAY 15

8.30-10.30	<p>Session 5: Multidisciplinary hazard and risk study on active coastal and insular volcanoes</p> <p>Session 30: A multiscale geoarchaeological approach for the interpretation of palaeo-landscapes and human activities</p> <p>Session 31: Processes and feedbacks during glacial terminations</p> <p>Session 45: Plants as Resources for Early Humans – Availability and potential exploitation of useful wild plants through Pleistocene human history</p> <p>Session 58: Rivers and fans: sediment and landform archives of long-term Quaternary landscape development and environmental change</p> <p>Session 83: Quaternary glacier-climate dynamics in the mid &amp; high latitudes of the Southern Hemisphere</p> <p>Session 73: Altered landscapes (Pleistocene and Holocene) of the archaeological sites</p> <p>Session 101: Integration of palaeoecological proxy data for the reconstruction of climate and environment dynamics</p> <p>Session 109: Animals, environments &amp; humans: diverse perspective from the Quaternary</p> <p>Session 127: Uncovering the environmental legacies of colonialism</p> <p>Session 135: Mammals and palaeoecology of the Euro-Mediterranean Quaternary</p> <p>Session 179: From coastal geomorphology to earthquake hazard (F-Coast2EHZ): new perspectives and multidisciplinary approaches</p> <p>Session 205: The environment background and human adaptations during the transition or shift from archaic humans to modern humans in East Asia</p>
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## COFFEE BREAK

10.30-11.00	<p>Session 204: Late Quaternary Faulting and Earthquake Geology in volcanic areas</p> <p>Session 30: A multiscale geoarchaeological approach for the interpretation of palaeo-landscapes and human activities</p> <p>Session 31: Processes and feedbacks during glacial terminations</p> <p>Session 48: Quaternary climate, landscape and processes in mountain belts</p> <p>Session 58: Rivers and fans: sediment and landform archives of long-term Quaternary landscape development and environmental change</p> <p>Session 73: Altered landscapes (Pleistocene and Holocene) of the archaeological sites</p> <p>Session 101: Integration of palaeoecological proxy data for the reconstruction of climate and environment dynamics</p> <p>Session 109: Animals, environments &amp; humans: diverse perspective from the Quaternary</p> <p>Session 125: African Quaternary environments: Palaeoecology and cultural responses to environmental variance</p> <p>Session 130: Advancing paleoscience in underrepresented regions: promoting records of past socio-environmental systems in the Global South and beyond</p> <p>Session 181: Transferring scientific knowledge on Quaternary geological processes and geohazards into disaster risk reduction activities</p> <p>Session 205: The environment background and human adaptations during the transition or shift from archaic humans to modern humans in East Asia</p>
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## LUNCH

13.00-14.00 Navigating Inqua as an ECR: Inqua structure, funding scheme, the ECR Representatives and community

## PLENARY SESSION CARLO DOGLIONI

## COFFEE BREAK +POSTER (ALL SESSIONS OF THE DAY)

14.00-14.45	<p>Session 21: Records of climate change from MIS 3 and MIS 2 in the Southern Hemisphere: The Lynda Petherick Memorial Session</p> <p>Session 30: A multiscale geoarchaeological approach for the interpretation of palaeo-landscapes and human activities</p> <p>Session 59: Past, present and future ice-ocean-atmosphere interactions between the Southern Ocean and the Antarctic Ice Sheet</p> <p>Session 63: Late Quaternary fluvial archives from the time of Homo sapiens: Stratigraphical, sedimentological, palaeontological and geoarchaeological records</p> <p>Session 100: Multi-methods geochronological approaches on Palaeolithic sites</p> <p>Session 101: Integration of palaeoecological proxy data for the reconstruction of climate and environment dynamics</p> <p>Session 105: Quaternary mapping across the world and the IQUAME European experience</p> <p>Session 109: Animals, environments &amp; humans: diverse perspectives from the Quaternary</p> <p>Session 128: African Acheuleans in the Early/early Middle Pleistocene: triggers, subsistences, time-lines</p> <p>Session 155: Linking land and sea - multiple approaches to investigating human-environment interactions in the coastal zone</p> <p>Session 185: Active faults evolution: revelations from different timescales</p> <p>Session 205: The environment background and human adaptations during the transition or shift from archaic humans to modern humans in East Asia</p> <p>Session 207: Not only z-corals: Quaternary reefs across the latitudinal and depth gradients</p>
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## TERPRO commission business meeting

18.15-19.15 COMICS@INQUA: The Quaternary Issue



# SCIENTIFIC PROGRAMME

## TUESDAY 18

Session 4:  
Bridging earthquakes over time scales – from the seismic cycle to Quaternary landscape evolution: contributions from the EDITH INQUA-TERPRO-Terrestrial Processes, Deposits and History Project

Session 14:  
Climate and environmental changes during the Holocene and past interglacials based on biological and geochemical proxies

Session 22:  
Mountain glaciations and their diversity: Perspectives in geomorphology, geochronology, palaeogeology, and palaeoclimatology

Session 36:  
Conservation paleobiology: late Neogene records as a baseline for conservation of modern ecosystems

Session 42:  
Ecosystem change and hunter-gatherer behavioral decisions in the terminal Pleistocene Pacific Rim

Session 84:  
Extending the limits of ice core science beyond new analytical, conceptual, and interdisciplinary frontiers

Session 88:  
Human-environmental interactions Along the Ancient Silk Roads

Session 9: The Anthropocene – Its geo-archaeological indicators and early inceptions through the modern

Session 138:  
Wet Environments and Human Communities: Interaction and Resilience in the Holocene and Antiquity

Session 139:  
Holocene Global Landuse

Session 163:  
Quaternary palaeoenvironmental dynamics/variability: promoting multiple proxy records from West-Central Africa

Session 173:  
Palaeoclimate records from the Southern Hemisphere

## COFFEE BREAK

Session 62:  
Paleoclimate, paleoweathering, paleoprovenance and machine learning on sediments during Late Quaternary Period

Session 14:  
Climate and environmental changes during the Holocene and past interglacials based on biological and geochemical proxies

Session 22:  
Mountain glaciations and their diversity: Perspectives in geomorphology, geochronology, palaeogeology, and palaeoclimatology

Session 36:  
Conservation paleobiology: late Neogene records as a baseline for conservation of modern ecosystems

Session 42:  
Ecosystem change and hunter-gatherer behavioral decisions in the terminal Pleistocene Pacific Rim

Session 84:  
Extending the limits of ice core science beyond new analytical, conceptual, and interdisciplinary frontiers

Session 88:  
Human-environmental interactions Along the Ancient Silk Roads

Session 69:  
Quaternary palaeolandscape and palaeoclimatic mental change in the North Sea

Session 138:  
Wet Environments and Human Communities: Interaction and Resilience in the Holocene and Antiquity

Session 139:  
Holocene Global Landuse

Session 163:  
Quaternary palaeoenvironmental dynamics/variability: promoting multiple proxy records from West-Central Africa

Session 173:  
Palaeoclimate records from the Southern Hemisphere

## ELSEVIER meeting

Session 92:  
Zooming into the Quaternary South Asia: Understanding the landscape-cultural-climatic evolution

Session 102:  
West African Quaternary: understanding past climate oscillations and human responses to anticipate future adaptations

Session 173:  
Palaeoclimate records from the Southern Hemisphere

## ATQUA Meeting

Session 92:  
Zooming into the Quaternary South Asia: Understanding the landscape-cultural-climatic evolution

Session 102:  
West African Quaternary: understanding past climate oscillations and human responses to anticipate future adaptations

Session 173:  
Palaeoclimate records from the Southern Hemisphere

## PLENARY SESSION INGER GREVE ALSOS

Session 169:  
Quaternary Proglacial Lakes: Sediments, Landforms, Impacts

Session 14:  
Climate and environmental changes during the Holocene and past interglacials based on biological and geochemical proxies

Session 148:  
Climate-glaciers interactions in mid-latitude mountains

Session 36:  
Conservation paleobiology: late Neogene records as a baseline for conservation of modern ecosystems

Session 43:  
Millennial paleo-landscape reconstructions of coastal areas. From field data to modelling approaches

Session 84:  
Extending the limits of ice core science beyond new analytical, conceptual, and interdisciplinary frontiers

Session 88:  
Human-environmental interactions Along the Ancient Silk Roads

Session 176:  
Tectonic and Climate-driven Landscape Evolution a never-ending challenge for modern society (Thoughts from LEMON project, INQUA - ATQUA)

Session 148:  
Climate-glaciers interactions in mid-latitude mountains

Session 162:  
Astronomical forcing and nonlinear climate feedbacks during the Pleistocene Epoch

Session 70:  
Global and local views on the ecological, environmental, and climatic backdrop for hominin dispersal out of Africa in the early Pleistocene

Session 84:  
Extending the limits of ice core science beyond new analytical, conceptual, and interdisciplinary frontiers

Session 88:  
Human-environmental interactions Along the Ancient Silk Roads

Session 112:  
Micromorphology as a tool in Quaternary studies to reconstruct changes in natural and anthropogenic sequences

## COMICS@INQUA: HEY Signing copies

Session 99:  
Lipid biomarkers as molecular archives of human activity from archaeological sites

Session 103:  
Terrestrial hydroclimates: towards quantification and climate model comparisons

Session 118:  
Cave deposits for in deep Quaternary understanding of climate and environment

## SACCOM Commission Business meeting

## CONGRESS DINNER

18:15-19:15

20:00

# SCIENTIFIC PROGRAMME

WEDNESDAY 19															
8.30-10.30	Session 11: Proxy-based reconstructions of atmospheric and oceanic patterns	Session 15: Understanding regional and global monsoons changes across timescales biological and geochemical proxies	Session 14: Climate and environmental changes during the Holocene and past interglacials based on biological and geochemical proxies	Session 64: Mapping Ancient Africa: Climate, Vegetation & Humans	Session 77: Quantitative proxies for palaeoenvironmental reconstructions from less and terrestrial archives	Session 79: The Global Tropics from the Pliocene to the Anthropocene	Session 87: Prehistoric hunter-gatherers' adaptation during the Glacial in Europe	Session 104: Novel molecular tools (biomarkers and DNA) in climatic and environmental archives – challenges, advances, and prospects	Session 106: Evolution of coastal environments under natural and anthropogenic processes: the role of geoscience	Session 126: Sub-annual to decadal records of environmental change	Session 147: Sea-Level, Ice-Sheet, and Earth system evolution: understanding the past to constrain the future	Session 157: Peatlands through time: dynamics and palaeo-environmental reconstruction	Session 164: Understanding MIS 5d-a: sediments, paleoclimate, and long-distance correlation	Session 190: Paleosol memory of environmental change and man-landscape interactions: from soil profile to geosystem	
10.30-11.00	Session 14: Climate and environmental changes during the Holocene and past interglacials based on biological and geochemical proxies	Session 15: Understanding regional and global monsoons changes across timescales biological and geochemical proxies	Session 20: Subglacial erosion, transport, and deposition from landform and sediment evidence to modeling	Session 77: Quantitative proxies for palaeoenvironmental reconstructions from less and terrestrial archives	Session 79: The Global Tropics from the Pliocene to the Anthropocene	Session 64: Mapping Ancient Africa: Climate, Vegetation & Humans	Session 82: Data science and paleoecology: current intersections and advances	Session 106: Evolution of coastal environments under natural and anthropogenic processes: the role of geoscience	Session 87: Prehistoric hunter-gatherers' adaptation during the Last Glacial in Europe	Session 147: Sea-Level, Ice-Sheet, and Earth system evolution: understanding the past to constrain the future	Session 157: Peatlands through time: dynamics and palaeo-environmental reconstruction	Session 208: Achievements and new perspectives in Quaternary scientific drilling	Session 25: Islands and their relationship with the continent to investigate time and mode of their colonization by terrestrial vertebrates and Homo	Session 52: Eurasia, one continent one common past: cross-continental stratigraphical correlations	
11.00-13.00	Session 11: Proxy-based reconstructions of atmospheric and oceanic patterns	Session 15: Understanding regional and global monsoons changes across timescales biological and geochemical proxies	Session 20: Subglacial erosion, transport, and deposition from landform and sediment evidence to modeling	Session 77: Quantitative proxies for palaeoenvironmental reconstructions from less and terrestrial archives	Session 79: The Global Tropics from the Pliocene to the Anthropocene	Session 64: Mapping Ancient Africa: Climate, Vegetation & Humans	Session 82: Data science and paleoecology: current intersections and advances	Session 106: Evolution of coastal environments under natural and anthropogenic processes: the role of geoscience	Session 87: Prehistoric hunter-gatherers' adaptation during the Last Glacial in Europe	Session 147: Sea-Level, Ice-Sheet, and Earth system evolution: understanding the past to constrain the future	Session 157: Peatlands through time: dynamics and palaeo-environmental reconstruction	Session 208: Achievements and new perspectives in Quaternary scientific drilling	Session 25: Islands and their relationship with the continent to investigate time and mode of their colonization by terrestrial vertebrates and Homo	Session 52: Eurasia, one continent one common past: cross-continental stratigraphical correlations	
13.00-14.00	LUNCH														
14.00-14.45	PLENARY SESSION JULIE BRIGHAM GRETTE														
14.45-15.45	COFFEE BREAK + POSTER (ALL SESSIONS OF THE DAY)														
16.15-18.15	Session 13: Records of LGM climate and ecosystems dynamics	Session 15: Understanding regional and global monsoons changes across timescales biological and geochemical proxies	Session 28: Timing of freshwater ecosystem response to external forcing: evidence from high-resolution multi-proxy lake and peat bog records	Session 18: Dansgaard-Oeschger events in climate models and the real world	Session 37: Reconstructing Quaternary ice sheets	Session 72: The role of Tephrochronology in the study of Earth system dynamics during the Quaternary: Event timings, duration and frequencies	Session 120: Volcanic impacts on climate and society	Session 142: Palaeoecology and restoration ecology	Session 152: Archaeological cave sediments: a key to decipher human behavior and palaeoclimatic change	Session 158: The geomorphic signature of marine and continental Quaternary deposits	Session 166: Quaternary palaeohydrology: from the reconstruction of spatial impact of extreme events to long-term changes in catchments and landscapes	Session 174: Tracing the impact of palaeoenvironmental changes in ancient DNA	International Council 15-17		
18.15-19.15	PALCOM Commission Business meeting														
														SEQS Business meeting	

# SCIENTIFIC PROGRAMME

THURSDAY 20	
8.30-10.30	<p>Session 14: Climate and environmental changes during the Holocene and past interglacials based on biological and geochemical proxies</p> <p>Session 27: Resilience versus collapse: Human responses to climate change in the Quaternary</p> <p>Session 32: Paleo perspectives on a warmer and wetter future Arctic</p> <p>Session 18: Dansgaard-Oeschger events in climate models and the real world</p> <p>Session 37: Reconstructing Quaternary ice sheets</p> <p>Session 72: The role of Tephrochronology in the study of Earth system dynamics during the Quaternary: Event timings, duration and frequencies</p> <p>Session 142: Palaeoecology and restoration ecology</p> <p>Session 133: Unravelling Mediterranean sensitivity to past rapid climate variability</p> <p>Session 140: Quantifying climate change in Australasia: challenges and opportunities</p> <p>Session 158: The geomorphic signature of marine and continental Quaternary deposits</p> <p>Session 166: Quaternary palaeohydrology: from the reconstruction of spatial impact of extreme events to long-term changes in catchments and landscapes</p> <p>Session 170: Biotic markers and measures of biodiversity of Holocene environmental change</p> <p>Session 193: Indo-Asian Monsoon on decadal to centennial-millennial scale and their link to the Indo-Pacific past climate variability</p>
10.30-11.00	COFFEE BREAK
11.00-11.45	PLENARY SESSION PRADEEP SRIVASTAVA
11.45-12.45	POSTER (ALL SESSIONS OF THE DAY)
13.00-14.00	LUNCH
14.00-14.45	GENERAL ASSEMBLY II
14.45-15:15	FAREWELL
15:15-16:15	INQUA BOARD Meeting

# WORKSHOPS AND SHORT COURSES

<b>SUNDAY 10-THURSDAY13</b> PCSC1 Introduction to Ostracoda		
<b>THURSDAY 13</b>		
09.00-16.00		PCSC1 Introduction to Ostracoda
09.00-13.00	PCW4 Neotoma Paleoeology Database: Catalyzing Open Quaternary Science	PCW2 Best practices and data quality challenges for coastal marine proxies in the Arctic ACME Steering Committee
10.00-13.00	PCW3 Reconstructing the Quaternary explosive volcanic history of the Anatolian Peninsula: Implications for volcanic hazard assessments in Turkey	
14.00-16.00	PCW4 Neotoma Paleoeology Database: Catalyzing Open Quaternary Science	PCSC1 Introduction to Ostracoda
14.00-17.00	PCW3 Reconstructing the Quaternary explosive volcanic history of the Anatolian Peninsula: Implications for volcanic hazard assessments in Turkey	
<b>SUNDAY 16</b>		
09:00-13:00	PCW1 Exploring the interface between Sustainability and Palaeoecology  MCW2 Multi-theme Quaternary database for the Global South: challenges and opportunities  MCW4 RECENT DEVELOPMENTS IN LANDSLIDE SCIENCE: Implications for Geomorphic Modeling, Hazard Assessment, and Paleoclimate Proxies	MCW5 Processes and feedbacks during glacial terminations  MCSC2 Reconstructing past climates from biotic assemblages  MCSC3 Towards consolidating a Latin American Quaternary network  MCW1 International Quaternary Map of Europe (QUAME 2500 Consultation Workshop)
14:00-16:00	MCW2 Multi-theme Quaternary database for the Global South: challenges and opportunities	MCW6 Inter Continental Scientific Drilling Program: Scopes, Design and future prospects for Early Career Researchers
16:00-18:00	MCW4 RECENT DEVELOPMENTS IN LANDSLIDE SCIENCE: Implications for Geomorphic Modeling, Hazard Assessment, and Paleoclimate Proxies	MCSI An introduction to cestr, an R package to perform probabilistic climate reconstructions from palaeoecological datasets  MCW5 Processes and feedbacks during glacial terminations

# INQUA AWARDS NOMINEES

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INQUA awards will be presented during the General Assembly 1, July Friday 14, 10.00-12.00 am CET time.

INQUA presents awards to scientists who distinguish themselves through contributions to Quaternary science and to INQUA.

## THE SIR NICHOLAS SHACKLETON MEDAL FOR OUTSTANDING YOUNG QUATERNARY SCIENTISTS

The 2021 **Shackleton Medal** nominees

- Alexander Francke (Australia)
- Daniel Ibarra (USA)
- Julie Loisel (USA)
- Eleonora Regattieri (Italy)

The **winner** of the 2021 Sir Nicholas Shackleton Medal is

- **Julie Loisel (USA)**

The 2023 **Shackleton Medal** nominees

- Qiaomei Fu (China)
- Petra Jamšek Rupnik (Slovenia)

## THE LIU TUNGSHENG DISTINGUISHED CAREER MEDAL FOR DISTINGUISHED SERVICE TO THE INTERNATIONAL COMMUNITY IN QUATERNARY SCIENCE

The 2023 **Liu Tungsheng Medal** nominee

- Denis-Didier Rousseau (France)

## THE INQUA DISTINGUISHED SERVICE MEDAL IS AWARDED TO INDIVIDUALS WITH AN OUTSTANDING CONTRIBUTION TO INQUA

The 2023 **INQUA Distinguished Service Medal** nominees

- Norm Catto (Canada)
- Alessandro Maria Michetti (Italy)





# PLENARY LECTURES

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SATURDAY, JULY 15 – 14:00-14:45

## CARLO DOGLIONI

ISTITUTO NAZIONALE DI GEOFISICA E VULCANOLOGIA

*Carlo Doglioni is professor of geodynamics at the Sapienza University of Rome since 1997, after having worked in the universities of Ferrara, Bari and Potenza in Italy. He visited several international universities such as Basel, Oxford, Rice Houston, and Columbia Palisades. He was President of the Italian Geological Society (SGI, 2009-2014). Since 2016 he is president of the National Institute of Geophysics and Volcanology (INGV). His research is mainly on the mechanisms of plate tectonics controlled by the combination of tidal forces and mantle convection, and the origin of seismicity, studies for which he has received numerous awards. He is member of the National Academy of the Lincei, of the National Academy of Sciences called the XL, and of the Academy of Europe.*



## QUATERNARY EARTH'S GRADIENTS

Any process on Earth is generated by a physical or chemical gradient. The surface of the planet is featured by complex geological patterns produced by both endogenous and exogenous gradients. The lack of direct investigations still makes the Earth's interior poorly understood and prevents complete clarification of the deep gradients and the mechanisms ruling the Earth's vitality. However, present-day plate motions and the geometry of plate boundaries allow a preliminary integrated understanding of the geodynamics of the Earth. Viscosity gradients in the low-velocity zone (LVZ at 100-200 km depth) determine variable decoupling and velocity gradients in the overlying lithospheric plates. On the other hand, consequent positive and negative velocity gradients between plates control gravitational and elastic pressure gradients at plate boundaries, hence strain rate, seismicity, and volcanism. Therefore, a cascade of gradients dictates Earth's geodynamics. The tidal bulge is slightly easterly misaligned with respect to the Earth-Moon gravitational alignment, triggering a pressure gradient generating a torque of the lithosphere able to westerly shift the lithosphere relative to the underlying mantle, and slowing down the Earth's rotation. The speed of plates oscillates with the tidal harmonics, confirming the body tides as being a fundamental mechanism in controlling plate tectonics and the asymmetry of plate boundaries both in the past as well as in Quaternary times. Anthropogenic degassing in the atmosphere generated a further perturbing gradient determining climate warming.

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MONDAY, JULY 17 – 14:00-14:45

## HAI CHENG

INSTITUTE OF GLOBAL ENVIRONMENTAL CHANGE, XI'AN JIAOTONG UNIVERSITY, XI'AN, CHINA

*Hai Cheng received his PhD degree in geochemistry at Nanjing University (1988) and is currently a professor at Xi'an Jiaotong University, China. He has over the past three decades been at the leading edge in technical developments of U-series to address fundamental questions in Quaternary climate change. He is one of world-leading experts on paleoclimate studies and played an important role in the reconstruction of climate history in numerous climate systems using speleothem records worldwide. The related researches have produced a set of absolute chronological benchmarks for correlating and calibrating climate variability globally. The broad significance of his scientific contributions is attested by ~600 publications, including 30 in Science and Nature (H-index=110, citations>70000), and a current ESI rank of 16<sup>th</sup> in geosciences. Hai Cheng is also a foreign corresponding member of Austrian Academy of Sciences, AGU fellow, Geochemical Fellow of Geochemical Society, and AGU Emiliani Lecturer.*



## SPELEOTHEM-BASED CHRONOLOGY AND QUATERNARY CLIMATE CHANGE

Hai Cheng, Xiyu Dong, Jingyao Zhao, Hanying Li, Dianbing Liu, Gayatri Kathayat, Haiwei Zhang, Yanjun Cai, Baoyun Zong, Xue Jia, Wenjing Du, Kexin Wang

Speleothems are secondary cave deposits (calcite and aragonite) formed from meteoric percolation waters. Abundant climatic information held in the water, particularly the oxygen isotopic signal ( $\delta^{18}\text{O}$  and  $\delta^{17}\text{O}$ ), was encoded in speleothems and extensively studied globally. Together with continued U-Th and U-Pb dating technical advances, speleothem records have become crucial in Quaternary sciences, providing coverage over virtually all the terrestrial regions with precise chronologies from orbital to decadal timescales. In the past decade, the new generation speleothem records, characterized by high temporal resolution, precise age control (due to high U content and annual growth banding) and large amplitude of  $\delta^{18}\text{O}$  variation, have gradually emerged, propelling speleothems to the forefront of Quaternary chronology and paleoclimatology. In this presentation, we briefly introduce new developments in speleothem records over the Quaternary from the Asian Monsoon (AM) domain. We then report a new composite speleothem  $\delta^{18}\text{O}$  record based on new generation speleothem records from the AM region, spanning the last 60 ka. A set of chronological benchmarks in this record leads to a much-improved chronology for calibrating and correlating climate variability in the time period. We also established the strategy to correlate the AM record to marine and ice core records, and validated it at subcentennial-precision via the Younger Dryas events globally. These new developments allow us to establish a precise timeline of climate variability recorded in speleothem, marine and ice core records on the same chronology, thus providing a powerful basis upon which we can better understand a number of fundamental issues in the Quaternary climate change, including the relations between the high-latitude ice sheet/Atlantic meridional overturning circulation (AMOC) and low-latitude monsoon variations, the cause and global propagation directionality of abrupt millennial-scale climate events, and interplays between low- and high-latitude hydroclimates.

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TUESDAY, JULY 18 – 14:00-14:45

## INGER GREVE ALSOS

*The Arctic University of Norway*

*Professor Inger Greve Alsos is Director of the Aurora Centre for Arctic Ecosystem Genomics at UiT - The Arctic University of Norway, Tromsø. Her research focuses on the effects of climate change and human impact on northern and alpine ecosystems with special emphasis on plants. She generally works on long timescales (Pleistocene-Holocene) and at regional geographical scales (circumpolar/arctic-alpine), and particularly on post-glacial dispersal frequency and routes in the amphiatlantic region. More recent work concentrates on using ancient sedimentary DNA to study past ecosystem diversity, species persistence, and ecosystem build-up. She has also assembled large-scale genome-skims of vascular plants which greatly improves species identification in ancient DNA studies and facilitates methods for going beyond species level detection (palaeophylogeography). Her research group is also moving towards full-ecosystems reconstruction providing new data on the past diversity of a range of organisms in terrestrial and marine environment.*



## AN-ECOSYSTEM RECONSTRUCTION REVOLUTION USING ANCIENT SEDIMENTARY DNA

Inger Greve Alsos

Ancient sedimentary DNA (sedaDNA), which has provided new insights into megafauna extinction and even the reconstruction of two million old ecosystems, is revolutionizing our understanding of long-term ecosystem changes. A large proportion of plants may be identified to species level, allowing us to use plants traits to reconstruct past abiotic (e.g. moisture, temperature, pH) and biotic (pollinators, mycorrhiza) environments. Consistent detection of mammals has been challenging, but methods have improved, allowing regional-scale analyses. Also, other organisms such as fish, birds, and worms are regularly detected. I will present some highlights from our studies in arctic and alpine regions. These reveal several thousand-year delays in plant arrival following glacial retreat in Northern Fennoscandia, and millennial time-scales for the formation of stable and resilient levels of diversity and ecosystem functioning. The earliest postglacial terrestrial mammal to arrive was reindeer, followed shortly after by wolf. Boreal species like beaver arrived at the same time as the tree species of pine, mountain ash, and poplar. Elk did not appear until around 8,700 years ago, after which the trait and ecosystem functional diversity stabilised and even became resistant to new immigration. Sedimentary ancient DNA may also be used to reconstruct human impact, either by using domesticated species or indicator species as a quantification. For the Alps, humans had stronger impact on species richness over the last 6,000 years than climate. We are currently exploring how we can combine time-series, process-based ecosystem models, and inverse modelling methods, to recover the biotic and abiotic processes underlying ecosystem dynamics. The next step will be to use these informed models to extrapolate beyond current dynamics and provide robust forecasts of ecosystem responses to future climate change.

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WEDNESDAY, JULY 19 – 14:00-14:45

## JULIE BRIGHAM-GRETTE

UNIVERSITY OF MASSACHUSETTS-AMHERST

*Julie Brigham-Grette has 40 years of research expertise in Arctic climate change recorded in the ocean and terrestrial sediment records of Beringia. She is especially knowledgeable about climate change over the last few million years, including the history of Arctic Sea ice, sea level change, and western Arctic landscape change. She is currently engaged with the people of Mekoryuk and Kongiganak AK via the NSF Navigating the New Arctic Program and landscape change. She was Chair of the Polar Research Board of the US National Academy of Sciences (2014-2020) and Past-President of the American Geophysical Union Global Environmental Change section, Past-President of the Quaternary Division of the Geological Society of America. Brigham-Grette is an elected Fellow of the American Geophysical Union and the Geological Society of America.*



## THE PLIOCENE-QUATERNARY EVOLUTION OF THE ARCTIC: THE MESSY TRANSITION FROM FOREST TO TUNDRA, AND NOW OUR RETURN TO THE PLIOCENE.

The geologic record paleoenvironmental change across the Arctic since 4 million years ago provides insights into natural experiments of the impacts of climate change. The Arctic borderlands were mostly forested to the coast of the Arctic Ocean 3 million years ago and it's likely that sea ice existed only during the Pliocene winters. The Greenland Ice sheet did not yet exist except for tidewater glaciers exiting the high mountains of eastern Greenland. Global temperatures were only about 3 degrees warmer than today. However, the transition from that warm "blue arctic" to one supporting a glaciated Greenland was punctuated by numerous super interglacials, possibly coinciding with the repeated collapse of Greenland and likely partial deglaciation of parts of west Antarctica. Evidence of exceptionally warm Arctic interglacials from Lake El'gygytgyn NE Russia, combined with new evidence for the periodic collapse of the W. and E. Antarctic Ice Sheet and Greenland drives the need to reassess climate sensitivity and cryosphere dynamics on many timescales. Some questions remain about the timing for the onset of perennial vs seasonal sea ice across the Arctic Basin around the time of the MPT. Moreover, our binary view of the Bering Strait arctic gateway – as a 50 m deep seaway either flooded or subaerially exposed depending on global sea level over the past 2 million years – is driving new questions across scientific disciplines ranging from paleoceanography to climate modeling. A simply eustatic view of this gateway will require cross-disciplinary efforts to incorporate terrestrial, oceanographic, environmental, genomic, tectonic, and Indigenous perspectives on the history of Beringian terrestrial and oceanographic connections. Paleoclimate evidence of the polar cryosphere response to elevated global temperatures of only 2-3 degrees (or less) combined with polar amplification presages a warming future, partially hidden in recent years by the lagged response of the oceans, atmosphere, and cryosphere to anthropogenic influences. Our future will depend on the ability of societies to recognize and respond to the consequences of significant environmental change. The challenge to the science community is to communicate this data-driven reality.

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THURSDAY, JULY 20 – 14:00-14:45

## PRADEEP SRIVASTAVA

*Department of Earth Sciences, IIT Roorkee, India*

*Pradeep Srivastava is a trained sedimentologist and geomorphology who has >20 years of working experience in the Quaternary landscape of Himalaya and its foreland. He researches has helped understanding the (i) fluvial aggradation and incision processes as function of climate and tectonics of Himalaya and the Ganga Plain (ii) past and present extreme hydrological events in Himalaya. He has published >100 research articles from across NW & NE Himalaya. He serves as an Associate professor at the Indian Institute of Technology at Roorkee.*

*Pradeep is a member of international science steering committee of Past Global Changes and is recipient of GK Gilbert Award of AAG, USA. He serves on the editorial boards of INQUA's flagship journal: Quaternary International and Journal of Quaternary Science (Wiley) and Paleo-3 (Elsevier). He is Vice President of Association of Quaternary Researchers in India and is an elected fellow of the Indian National Science Academy.*



## GEOLOGY FLOODS IN HIMALAYA

The increasing frequency of large floods and population in Himalaya compounds the fragility of this active mountain belt into successively bigger hydrological disasters. The sedimentary archives of floods inform greatly on how the continental scale geology of Himalaya controls the flood magnitude and damage to infrastructure and society. The geology of Himalaya comprises several southward propagating thrust sheets that are separated by major thrust zones like the Main Central Thrust (MCT), the Main Boundary Thrust and the Himalayan Frontal Thrust and build a unique orography. It is the geometry of the Décollement of Himalayan wedge that induces duplexing below the MCT zone and steep rise in the topography that acts as an orographic barrier to northerly trajectory of the Indian summer monsoon (ISM). The geomorphic investigations after the 2013 large flood in Himalaya exhibited damage clustering over this zone that implied linkages between Décollement geometry and intensity of flood hazard. Similarly, the continental scale geomorphology of the Southern edge of Tibet seems forcing the flood intensities in the rivers Indus and the Brahmaputra that are orders of magnitude higher in the later catchment. The large part of these rivers drain through drier northern front of Himalaya and the knowledge on their water-sediment routing, erosional hotspots and ISM-flood dynamics is much warranted. Geochronology, sediment and provenance studies on the Slack Water Deposits (SWDs) preserved along the rivers like the Indus, the Brahmaputra provided a detailed geological perspective on (i) predictability of damage zones in Himalaya (ii) flood magnitudes in these rivers and geological controls (iii) erosional hotspots (iii) How ISM variability controls the flood frequencies in these rivers? (iv) do the floods control Human migration? The talk will dwell on the field and laboratory datasets and will attempt answer these questions.

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# PRESENTATIONS FORMAT

## ORAL PRESENTATIONS

Presentation time should not exceed 12 minutes+ 2 minutes for questions. Presentations must be in Powerpoint 2021 format (with .pptx extension) and in 16:9 format.

You can also save your presentation in pdf, with the same format (16:9).

If you want to add videos, video files must be in mp4 format with a maximum resolution of 1920x1080.

## SPEAKER READY ROOM

All ppt or pdf presentations must be dropped at the speaker ready room located at Scienze della Terra, entrance Geologia, first floor, room 12.

Presentations should be supplied to the AV technician in the speaker ready room at least 24 hours before your presentation time.

Please note that it is not possible to load the presentations in the meeting rooms, they must be brought to the speaker ready room to be loaded centrally.

The speaker ready room will be open during the following hours:

Friday 14 July	10.30-18.30
Saturday 15 July	8.00-18.00
Sunday 16 July	CLOSED
Monday 17 July	8.30-18.00
Tuesday 18 July	8.30-18.00
Wednesday 19 July	8.30-18.00
Thursday 20 July	CLOSED

## POSTER PRESENTATIONS

Posters must have a maximum size of B1 (70x100 cm or 23x29 inches) in vertical (portrait) mode. No worries if you have already printed your poster in A0 format, as previously communicated.

We offer the possibility to print your poster in Rome, about 500m from university, so that you do not have to carry it with you especially if you have to travel a lot to reach the congress venue.

You can upload your file, get it printed and pick it up at Pioda, Viale Ippocrate 154 <https://www.piodaimaging.it/product-category/plottaggi/>

**The discount code is CNR-22**

Unfortunately, the website is in italian but you may translate it in English using your browser translating tools. However, as an example a 70x100 color standard 90 gr. paper will cost less than 5€

Poster presentations will take place in the MUST 1, MUST2 and MAC Halls on every day of the congress. Posters are rotated daily. On Friday 14 the halls will open at 11:30 and posters should be in place by 14:00. All the other congress days, presenters will have access to the halls from 8:30 each morning and posters should be in place by 10:30.

Posters should remain in situ for the day, and be removed by 17:00. Posters that are not removed by the presenters will be removed by the organization and disposed.

A complete poster list, including abstracts, is available on the congress website and app.

# FIND YOUR SESSION!

TO FIND THE EXACT SCHEDULE OF YOUR TALK PLEASE LOGIN INTO YOUR EXORDO ACCOUNT OR USE THE CONGRESS APP

## TOPIC 1-FROM NATURAL PROCESSES TO GEOHAZARDS

TOPIC	#	SESSION NAME	DAY/S
1A	4	Session 4: Bridging earthquakes over time scales – from the seismic cycle to Quaternary landscape evolution: contributions from the EDITH INQUA-TERPRO-Terrestrial Processes, Deposits and History Project	18
1B	5	Session 5: Multidisciplinary hazard and risk study on active coastal and insular volcanoes	15
1A	34	Session 34: Discussion Panel on Assessing Fault Capability in Different Geodynamic and Environmental Settings	18
1A	38	Session 38: Reconciling deformation through Geomorphology, Active tectonics and Paleoseismology investigations along the India plate	14
1A	47	Session 47: The geological record of capable faults	18
1	72	Session 72: The role of Tephrochronology in the study of Earth system dynamics during the Quaternary: Event timings, duration and frequencies	19-20
1A	78	Session 78: Subduction zone palaeoseismology	14
1E	95	Session 95: Impacts of abrupt climate change on ecosystems, landscapes and societies through INTeGration of Ice-core, MARine and TERrestrial records (INTIMATE)	14
1A	107	Session 107: More than the sum: fault re-ruptures and cumulative damage during seismic sequences	14
1A	123	Session 123: Advances in tectonic geomorphology, paleoseismology, and multi-disciplinary active fault studies	17
1	154	Session 154: Quaternary research in South America: paleoclimate, tectonic, volcanic and surface processes	17
1E	159	Session 159: Human-environment interactions in coastal areas: new ways to learn from the past	17
1E	166	Session 166: Quaternary palaeohydrology: from the reconstruction of spatial impact of extreme events to long-term changes in catchments and landscapes	19-20
1A	176	Session 176: Tectonic and Climate-driven Landscape Evolution a never-ending challenge for modern society (Thoughts from LEMON project, INQUA - AIQUA)	18
1	179	Session 179: From coastal geomorphology to earthquake hazard (F-Coast2EHZ): new perspectives and multidisciplinary approaches	15
1B	180	Session 180: Sedimentary record of past catastrophic coastal flooding (tsunami, storms)	14
1	181	Session 181: Transferring scientific knowledge on Quaternary geological processes and geohazards into disaster risk reduction activities	15
1A	182	Session 182: From Cores to Code: Data-Model Integration to Improve Reconstructions and Forecasts of Coastal Change	14
1A	184	Session 184: Seismic hazard assessment in populated areas of Latin America: incorporating seismogenic faults	14
1D	185	Session 185: Active faults evolution: revelations from different timescales	15
1B	204	Session 204: Late Quaternary Faulting and Earthquake Geology in volcanic areas	15

# FIND YOUR SESSION!

## TOPIC 2-LANDFORMS, FACIES ARCHITECTURE AND SEQUENCE STRATIGRAPHY

TOPIC	#	SESSION NAME	DAY/S
2D	6	Session 6: Recent advances in understanding the Quaternary geomorphological evolution of continental margins	17
2A	20	Session 20: Subglacial erosion, transport, and deposition: from landform and sediment evidence to modeling	19
2A	24	Session 24: Fluid venting as a submarine geomorphic process	14
2B	33	Session 33: Quaternary Glaciations: Processes, Sediments and Landforms	17
2	37	Session 37: Reconstructing Quaternary ice sheets	19-20
2D	43	Session 43: Millennial paleo-landscape reconstructions of coastal areas. From field data to modelling approaches	18
2	48	Session 48: Quaternary climate, landscape and surface processes in mountain belts	15
2A	63	Session 63: Late Quaternary fluvial archives from the time of Homo sapiens: Stratigraphical, sedimentological, palaeontological and geochronological records	15
2	68	Session 68: Rivers and fans: sediment and landform archives of long-term Quaternary landscape development and environmental change	15
2D	106	Session 106: Evolution of coastal environments under natural and anthropogenic processes: the role of geoscience	19
2A	112	Session 112: Micromorphology as a tool in Quaternary studies to reconstruct changes in natural and anthropogenic sequences	18
2	145	Session 145: Climate Records from Coastal Systems	17
2D	155	Session 155: Linking land and sea - multiple approaches to investigating human-environment interactions in the coastal zone	15
2	156	Session 156: Multidisciplinary approaches of calcareous tufas and travertines: investigating environments and climates from Prehistory to today	17
2A	158	Session 158: The geomorphic signature of marine and continental Quaternary deposits	19-20
2A	160	Session 160: Geoheritage: role of scientists to keep earth scientific treasures for future generations	17
2A	169	Session 169: Quaternary Proglacial Lakes: Sediments, Landforms, Impacts	18
2	183	Session 183: Frontiers in drylands research	17



## FIND YOUR SESSION!

### TOPIC 3- QUATERNARY ENVIRONMENTS AND HUMAN EVOLUTION: FOSSIL RECORD, PHYLOGENY, PALAEOBIOLOGY, PALAEOECOLOGY AND CULTURAL MODELS

TOPIC	#	SESSION NAME	DAY/S
3	30	Session 30: A multiscale geoarchaeological approach for the interpretation of palaeo-landscapes and human activities	15
3	45	Session 45: Plants as Resources for Early Humans – Availability and potential exploitation of useful wild plants through Pleistocene human history	15
3A	46	Session 46: Application of biomarkers and CSIA in Pleistocene archaeology	18
3	55	Session 55: Understanding the human-animal-environment interface in Quaternary South Asia	17
3A	56	Session 56: The Palaeolithic of the Americas: population dynamics, behavioral variability and techno- cultural diversity around the Last Glacial Maximum (MIS 2-3)	14
3B	60	Session 60: Geoarcheology and paleoenvironmental evolution of the coastal areas	17
3A	64	Session 64: Mapping Ancient Africa: Climate, Vegetation & Humans	19
3	70	Session 70: Global and local views on the ecological, environmental, and climatic backdrop for hominin dispersal out of Africa in the early Pleistocene	18
3	71	Session 71: Quaternary of North Africa: chronostratigraphy and paleoclimatic variations	18
3	73	Session 73: Altered landscapes (Pleistocene and Holocene) of the archaeological sites	15
3A	79	Session 79: The Global Tropics from the Pliocene to the Anthropocene	19
3D	87	Session 87: Prehistoric hunter-gatherers' adaptation during the Last Glacial in Europe	19
3	88	Session 88: Human-environmental Interactions Along the Ancient Silk Roads	18
3B	90	Session 90: Ancient DNA from Quaternary and Archaeological Sediments	17
3B	92	Session 92: Zooming into the Quaternary Research in South Asia: Understanding the landscape- cultural-climatic evolution	18
3B	99	Session 99: Lipid biomarkers as molecular archives of human activity from archeological sites	18
3	100	Session 100: Multi-methods geochronological approaches on Palaeolithic sites	15
3	102	Session 102: West African Quaternary: understanding past climate oscillations and human responses to anticipate future adaptations	18
3	104	Session 104: Novel molecular tools (biomarkers and DNA) in climatic and environmental archives – challenges, advances, and prospects	19
3	109	Session 109: Animals, environments & humans: diverse perspectives from the Quaternary	14-15
3A	115	Session 115: Palaeoenvironmental research in SW Asia: Recent advances & future opportunities	14
3	121	Session 121: The anthropology of climate change	14
3D	125	Session 125: African Quaternary Anthro-environments: Palaeoecology and cultural responses to environmental variance	15
3C	127	Session 127: Uncovering the environmental legacies of colonialism	15
3	128	Session 128: African Acheuleans in the Early/early Middle Pleistocene: triggers, techno-subsistences, time-lines	15
3A	130	Session 130: Advancing paleoscience in underrepresented regions: promoting records of past socio-environmental systems in the Global South and beyond	15
3A	137	Session 137: Geological and climate forcings on human groups / ancient societies, and their feedbacks	17
3A	138	Session 138: Wet Environments and Human Communities: Interaction and Resilience in the Holocene and Antiquity	18
3A	139	Session 139: Holocene Global Landuse	15
3	163	Session 163: Quaternary palaeoenvironmental dynamics/variability: promoting multiple proxy records from West-Central Africa	18
3	186	Session 186: The Long Walk to the Anthropocene: Exploration within Quaternary contexts	17
3	190	Session 190: Paleosol memory of environmental change and man-landscape interactions: from soil profile to geosystem	19
3	205	Session 205: The environment background and human adaptations during the transition or shift from archaic humans to modern humans in East Asia	15

# FIND YOUR SESSION!

## TOPIC 4- ECOSYSTEMS AND BIOGEOGRAPHY FROM LATEST PLIOCENE TO "ANTHROPOCENE"

TOPIC	#	SESSION NAME	DAY/S
4D	9	Session 9: The Anthropocene – Its geo-archaeological indicators and early inceptions through the modern	18
4A	16	Session 16: Linking paleoenvironmental proxies at different scales: potential, problems and limits	14
4B	25	Session 25: Islands and their relationship with the continent to investigate time and mode of their colonization by terrestrial vertebrates and Homo dispersal	19
4	27	Session 27: Resilience versus collapse: Human responses to climate change in the Quaternary	20
4A	28	Session 28: Timing and structure of freshwater ecosystem response to external forcing: evidence from high-resolution multi-proxy lake and peat bog records	19
4	36	Session 36: Conservation paleobiology: late Neogene to Quaternary records as a baseline for conservation of modern ecosystems	18
4	42	Session 42: Ecosystem change and hunter-gatherer behavioral decisions in the terminal Pleistocene Pacific Rim	18
4A	44	Session 44: Environment-human interfaces, new frontiers of consilience in the reconstruction of the past	17
4A	67	Session 67: Exceptional archives: Leveraging visible and non-visible lagerstätten with cutting-edge methods to broaden our knowledge of Quaternary ecosystems	17
4	74	Session 74: Advances and new challenges in modeling landscape change in the "Anthropocene": Transdisciplinary approaches using remote sensing and geoarchaeology	14
4A	82	Session 82: Data science and paleoecology: current intersections and advances	19
4A	135	Session 135: Mammals biochronology and palaeoecology of the Euro-Mediterranean Quaternary	15
4C	141	Session 141: How can the Quaternary sciences contribute to scientific assessment of biodiversity, ecosystems, and nature?	17
4C	142	Session 142: Palaeoecology and restoration ecology	19-20
4D	143	Session 143: Environmental responses to climatic and human impacts in endangered biodiversity hotspots: past and present for future	17
4A	152	Session 152: Archaeological cave sediments: a key to decipher past human behavior and palaeoclimatic change	19
4A	170	Session 170: Biotic markers and measures of biodiversity of Holocene environmental change	20
4A	174	Session 174: Tracing the impact of palaeoenvironmental changes in ancient DNA	19
4A	197	Session 197: How can archaeology, palaeoecology, traditional knowledge, and more-than-human approaches contribute towards a more sustainable and culturally informed future?	17
4A	207	Session 207: Not only z-corals: Quaternary reefs across the latitudinal and depth gradients	15

## FIND YOUR SESSION!

### TOPIC 5- CLIMATE RECORD, PROCESSES AND MODELS

TOPIC	#	SESSION NAME	DAY/S
5	2	Session 2: Recent advances in understanding the causes of changes in regional and global palaeofire regimes: resources, tools and new approaches	17
5	3	Session 3: Orbital and millennial vegetation changes at global and regional scales during the Quaternary: insights from data and models	17
5	11	Session 11: Proxy-based reconstructions of atmospheric and oceanic patterns	19
5	15	Session 15: Understanding regional and global monsoons changes across timescales	19
5	18	Session 18: Dansgaard-Oeschger events in climate models and the real world	19-20
5	21	Session 21: Records of climate change from MIS 3 and MIS 2 in the Southern Hemisphere: The Lynda Petherick Memorial Session	15
5	31	Session 31: Processes and feedbacks during glacial terminations	15
5	32	Session 32: Paleo perspectives on a warmer and wetter future Arctic	20
5	62	Session 62: Paleoclimate, paleoweathering, paleoprovenance and machine learning on sediments during Late Quaternary Period	18
5	84	Session 84: Extending the limits of ice core science beyond new analytical, conceptual and inter- disciplinary frontiers	18
5	85	Session 85: Loess and dust deposits: beyond local studies	18
5	89	Session 89: Cenozoic sea-level indicators and ice sheet constraints to global sea-level change	17
5	103	Session 103: Terrestrial hydroclimates: towards quantification and climate model comparisons	18
5	118	Session 118: Cave deposits for in deep understanding Quaternary climate and environment	18
5	120	Session 120: Volcanic impacts on climate and society	19
5	126	Session 126: Sub-annual to decadal records of environmental change	19
5	140	Session 140: Quantifying climate change in Australasia: challenges and opportunities	20
5	173	Session 173: Palaeoclimate records from the Southern Hemisphere	18
5	177	Session 177: Factors influencing the diversity of loess sedimentary environments and the resulting variability of palaeoclimatic and palaeoenvironmental signals	18
5	208	Session 208: Achievements and new perspectives in Quaternary sciences from scientific drilling	19

# FIND YOUR SESSION!

## TOPIC 5- CLIMATE RECORD, PROCESSES AND MODELS

TOPIC	#	SESSION NAME	DAY/S
5A	13	Session 13: Records of LGM climate and ecosystems dynamics	19
5B	14	Session 14: Climate and environmental changes during the Holocene and past interglacials based on biological and geochemical proxies	18-19-20
5C	22	Session 22: Mountain glaciations and their diversity: Perspectives in geomorphology, geochronology, palaeoglaciology, and palaeoclimatology	18
5A	35	Session 35: Dust dynamics through the Quaternary: terrestrial records of climatic and environmental impacts	17
5B	41	Session 41: Late Quaternary desertification, landscape changes, paleoclimate, and human adaptation	14
5C	59	Session 59: Past, present and future ice-ocean-atmosphere interactions between the Southern Ocean and the Antarctic Ice Sheet	15
5F	66	Session 66: Data modelling and Inference	17
5B	69	Session 69: Quaternary palaeolandscape, palaeoclimatic and palaeoenvironmental change in the North Sea	18
5A	77	Session 77: Quantitative proxies for paleoenvironmental reconstructions from loess and terrestrial archives	19
5B	83	Session 83: Quaternary glacier-climate dynamics in the mid & high latitudes of the Southern Hemisphere	15
5A	98	Session 98: Past vegetation dynamics and their role in climate change	17
5A	101	Session 101: Integration of palaeoecological proxy data for the reconstruction of climate and environment dynamics	15
5B	133	Session 133: Unravelling Mediterranean sensitivity to past rapid climate variability	20
5G	147	Session 147: Sea-Level, Ice-Sheet, and Earth system evolution: understanding the past to constrain the future	19
5C	148	Session 148: Climate-glaciers interactions in mid-latitude mountains	18
5B	157	Session 157: Peatlands through time: developmental dynamics and palaeo-environmental reconstruction	19
5E	162	Session 162: Astronomical forcing and nonlinear climate feedbacks during the Pleistocene Epoch	18
5E	193	Session 193: Indo-Asian Monsoon on decadal to centennial-millennial scale and their link to the Indo-Pacific past climate variability	20

## FIND YOUR SESSION!

### TOPIC 6- THE QUATERNARY TIME MACHINE

TOPIC	#	SESSION NAME	DAY/S
6B	19	Session 19: Global characterization of the Neogene–Quaternary (Pliocene–Pleistocene) transition	17
6	29	Session 29: Escaping the trap: frontiers of trapped charge dating	17
6B	40	Session 40: The Anthropocene as a tool for characterizing recent planetary change and predicting future environmental challenges	17
6A	52	Session 52: Eurasia, one continent one common past: cross-continental stratigraphical correlations	20
6	58	Session 58: The new challenges for luminescence dating	17
6C	80	Session 80: Magnetostratigraphy and Environmental Magnetism contribution to understand paleoclimatic and paleoenvironmental changes	14
6D	105	Session 105: Quaternary mapping across the world and the IQUAME European experience	15
6C	134	Session 134: How Absolute and How Relative: Challenges and Resolutions Associated with Applying Dating Techniques in the Quaternary period	14
6A	164	Session 164: Understanding MIS 5d-a: sediments, paleoclimate, chronology and long-distance correlation	14
6D	196	Session 196: Quaternary sedimentary-basins evolution: controlling factors and implications for future scenarios or past reconstructions	14

### TOPIC 7 – TIME FOR CHANGE IN QUATERNARY SCIENCES

TOPIC	#	SESSION NAME	DAY/S
7	10	Session 10: Visualizing Science – The art of communicating science	14
7	108	Session 108: Equitable and ethical knowledge production in Quaternary Science	14
7	187	Session 187: Equity, Diversity and Inclusion Initiatives in the Quaternary Sciences	14
Metiq	Metiq	Special Session on the new 1:500k Quaternary Map of Italy (Metiq)	14

# FIELD TRIP MEETING POINTS

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## PRE CONGRESS FIELDTRIPS

### **PRE5 July 11-12**

Meeting point: Verona railway station  
8.30-9.00 am CET time.  
Fieldtrip Leader: Marco Peresani

### **PRE 8 July 9-13**

Meeting point: Torino Caselle airport arrivals  
2:00 pm CET time  
Fieldtrip Leader: Adriano Ribolini

### **PRE 10 July 9-11**

Meeting point: Trapani harbour, hydrofoil Liberty Lines to Marettimo  
9:00 am CET time  
Fieldtrip Leader: Fabrizio Antonioli

### **PRE 14 July 9-12**

Meeting point: Napoli Railway Station Piazza Garibaldi (Feltrinelli Bookshop)  
11:30 am CET time  
Fieldtrip Leader: Paola Petrosino

### **PRE 16 July 10-12**

Meeting point: Latina train station  
8:30 am CET time  
Fieldtrip Leader: Ilaria Isola

### **PRE 19 July 9-12**

Meeting point: Brindisi train station 5:00 pm CET time, Brindisi airport  
5:30 pm CET time  
Fieldtrip Leader: Raffaele Sardella

## MID CONGRESS FIELDTRIPS – JULY 16

### **MID 1**

Meeting point: Piazzale Aldo Moro, Sapienza University main entrance, 8:00 am CET time  
Fieldtrip Leaders: Marco Anzidei and Flavio Enei

### **MID 2**

Meeting point: Piazzale Aldo Moro, Sapienza University main entrance, 8:00 am CET time  
Fieldtrip Leader: Marco Anzidei

### **MID 3**

Meeting point: Piazzale Aldo Moro, Sapienza University main entrance, 8:00 am CET time  
Fieldtrip Leaders: Guido Giordano and Maria Luisa Carapezza

### **MID 4**

Meeting point: Piazza Venezia, Rome, in front of the Victor Emmanuel II National

Monument (known as Vittoriano or Altare della Patria), 9:00 am CET time  
Fieldtrip Leader: Stefano Gori

### **MID 5**

Meeting point: Piazzale Aldo Moro, Sapienza University main entrance, 8:00 am CET time  
Fieldtrip Leader: Danilo M. Palladino

### **MID 6**

Meeting point: Piazzale Aldo Moro, Sapienza University main entrance, 8:00 am CET time  
Fieldtrip Leaders: Valerio Ruscito, Alessia Masi, Ilaria Mazzini

### **MID 7**

Meeting point: on the stairs of Museo dell'Ara Pacis, Via di Ripetta, 3.00 pm CET time  
Fieldtrip Leader: Marco Pantaloni

## POST CONGRESS FIELDTRIPS – JULY 16

### **POST 8 July 21-24**

Meeting point: Split ...The fieldtrip will start on the 22<sup>nd</sup> at 8:00 am CET time.  
Fieldtrip Leader: Miko Slobodan

### **POST 9 July 21-24**

Meeting point: Palermo, via Lincoln 2 (in front of the Botanical Garden), 8:00 am CET time  
Fieldtrip Leader: Antonio Caruso

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# ECR EVENTS

FRIDAY 14 JULY  
ECR ICE BREAKER PARTY!!!

The party will start at 7:15 pm

**@ the MONK**  
**Via Giuseppe Mirri 35**  
**<https://www.monkroma.it/en/>**

With your voucher you will  
have a drink and a small  
buffet for free.



SATURDAY 15 JULY, 13-15

**Navigating Inqua as an ECR: Inqua structure, funding scheme, the ECR Representatives and community**

MONDAY 17 JULY, 13-15

**Organizing the INQUA-PAGES ECR workshop: the PASES experience**

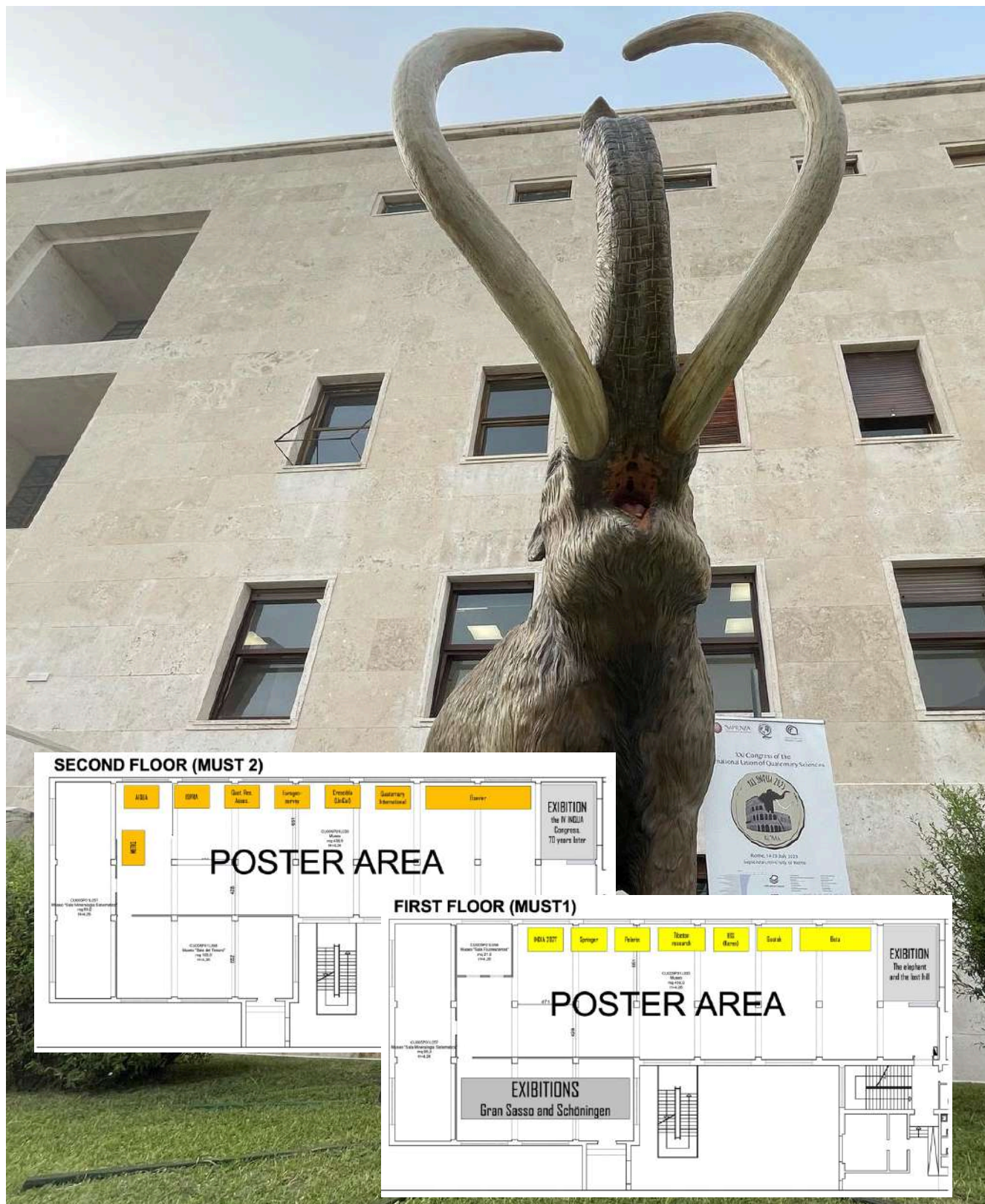
Both events will take place at Room 301/ Building Legge (CU002)

MONDAY 17 JULY, 18:15-19:15

**ECR business meeting (old + new ECR Reps)**  
Building Scienze della Terra (CU005), first floor, Room 11

# EXHIBITIONS AND EXPO

Four exhibitions complete the activities of the XXI INQUA Congress; They are located at Scienze della Terra, poster halls MUST 1 and 2. The exhibitions will open during the congress and may have guided assistance at 14:45-16:00





## "1953 IV INQUA CONGRESS: 70 YEARS LATER"

To celebrate the return of INQUA Congress in Italy, an exhibition with original and unpublished material from the 1953 event has been set up.

The material was provided by the Istituto Italiano di Paleontologia Umana (hereafter IIPU), which was the organizer of the IV Congress in 1953, the first INQUA event after the Second World War, held in Rome and Pisa. The IIPU historical archive includes both publications and abstracts, as well as typewritten or handwritten documents that the various organizers exchanged, in order to carry on the organization of the event and subsequent developments.

Among the most interesting documents there are preparatory notes for publications and extracts, later printed and distributed to the public, mainly concerning excursions and exhibitions, like "History of the drainage of the Agro Pontino - 1952 - Notes by Eugenia Segre Naldini (Nenè) in preparation for the 1953 INQUA International Congress in Rome and Pisa" and a letter from A.C. Blanc to L. Cardini to plan a post-congress visit to the Arene Candide (an archaeological site in Liguria). Several original photos will be on display, representing striking pictures of conference participants during field trips and visits to exhibitions. One may notice old-fashioned clothing, but the same enthusiasm and passion for the Quaternary research!

The exhibition also features a focus on the history of the discovery of climate change in the past of our planet, with an in-depth look at the central figure of Milutin Milanković and the story of the troubled fortune of his theory. During the INQUA congress in Rome the presentation of the great Serbian scientist was repeatedly interrupted by vociferous antagonists of his theories and finally the American Prof. Flint interrupted his speech claiming shortage on time. Milanković gave his *manuscript to one of the secretaries of the congress saying: "It will be printed!", and left the auditorium*



*For the first time in 1953, a logo was realized for the INQUA Congress and a pin with this symbol - representing climate change - was distributed to participants. (Photo courtesy of Zoran Stevanovic)*



*Milanković and Petar Stevanović on the steps of the Faculty of Letters at Sapienza, University of Rome during the INQUA 1953 congress. (courtesy of Zoran Stevanovic). Probably you will step the same stair!*

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## "THE ELEPHANT AND THE LOST HILL"

The exhibition originates from the restoration of a paleontological artifact that gained great notoriety at the time of its discovery in 1932, only to remain hidden from the public and scholars for over eighty years: the skull and left tusk of an ancient elephant - *Elephas (Palaeoloxodon) Antiquus* - found at the base of Velia Hill during excavations carried out to create Via dell'Impero, now known as Via dei Fori Imperiali. The dismantling of Velia Hill, connecting Quirinale and Campidoglio hills, was in fact necessary to create the connection between the Coliseum and Piazza Venezia

It was not until 2021 that the remains of the elephant were restored and put on display for the public. The Exhibition will provide an overview of the elephant's discovery within the long history of Velia, showcasing the different phases of occupation from antiquity to modern times. Archaeological, historical, artistic, and archival materials will be presented, all belonging to the Sovrintendenza Capitolina, the institution responsible for the preservation of the heritage that kindly offered to have the exhibition on stage for the XXI INQUA Congress. CNR IGAG also provided supporting material describing the stratigraphy and the geological evolution of Rome downtown area.

The exhibition was created by Claudio Parisi Presicce, Nicoletta Bernacchio, Isabella Damiani, Stefania Fogagnolo, Massimiliano Munzi.

More information at <https://www.aboutartonline.com/lelefante-e-il-colle-perduto-ai-mercati-di-traiano-una-mostra-sullo-sbancamento-della-velia-nel-1932>



*O. Ferretti, Demolitions for the opening of via dell'Impero with the remains of the prehistoric elephant, oil on paper 1932, Museum of Rome*

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## “A JOURNEY THROUGH THE CENTRAL APENNINE: A LOOK AT THE GRAN SASSO”

BY ROBERTA GIULIANI AND GIULIO SPERANZA

The Gran Sasso d'Italia massif is one of the best exposed segments of the central Apennines. Its peak is the highest in the whole chain (2912 m a.s.l.), preserving the southernmost glacier in Europe (Calderone Glacier). The lack of persistent vegetation provides a great opportunity to observe the landforms and the outcrops of the compressional geological structure of the chain, modelled since Early Pleistocene by glacial processes and active tectonics. The glacial footprint is evident in the depositional and erosional morphologies, making the mountain a monument to the Quaternary evolution of the Apennine.

The arrival at Campo Imperatore is thrilling: it is a place where time seems to have stopped and the imposing shape of the Corno Grande dominates the skyline of the plateau.

The works presented in the art exhibition, essentially oil painting, are all inspired by the Gran Sasso massif. Roberta Giuliani is a geologist, who has been frequenting the central Apennines for more than 20 years, studying the Quaternary geology, the surface and geomorphological effects of recent tectonics, and the crustal deformation in the area through a permanent GPS network.

Her research activity allowed Roberta to have a deep relationship with each landscape she painted, as these landscapes belong fundamentally to her memory. The numerous canvases depict the Gran Sasso massif under different lights, corresponding to different times, enhancing its volumes and making it almost an abstract subject. The light, depicted at different times of the day, makes the subject changeable. The Gran Sasso massif is thus repeated in the many canvases with the same view, and the viewer is a participant in this representation that becomes a tale of time flowing on these reliefs determining different light conditions.

Participating in the exhibition as a very welcome guest is Giulio Speranza, a professional photographer and also a geologist, who has worked on the Gran Sasso for a long time, publishing a wonderful book of black-and-white photographs taken with cameras with large-format analogue systems. The dialogue between Giulio's photographs and Roberta's paintings focuses on three views. They meet different and very personal representations that depict the same mountain and express the deep involvement of both authors.



Roberta Giuliani «Profilo 3», Canvas on oil

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## “SCHÖNINGEN: A THROW FOR THE AGES”

HUNTING, GATHERING AND LIFE 300,000 YEARS AGO

Why are we the way we are? When did we become human beings? What do our Stone Age ancestors have in common with us and how do we differ? What did they eat? What kind of animals and plants existed back then? And what were the environment and climate like?

The archaeological site of Schöningen, in Lower Saxony, plays an important role in answering these questions because humans are not only cultural beings, but also part of nature. As such, these hominins (*Homo heidelbergensis* at the transition to the neanderthal man) are, as any other being, exposed to the pressures of their environment. They adapt culturally, technically, and biologically.

Continuous excavations have been taking place in Schöningen on the edge of an open pit mine since 1994.

The shore of a lake from about 300,000 years ago was found at that very spot. The excellent preservation conditions and the many remains of this extraordinary archaeological archive allow a particularly detailed reconstruction of the living environment at that time.

Special finds are the wooden Schöningen spears, remains of several sabre-toothed cats and an almost complete elephant in an archaeological context.

This travelling exhibition provides insights into these bygone times thanks to highly detailed replicas, drawings by the artist Benoît Clarys, films and large-format visual material. However, the information presented is not only about the past. Topics such as climate fluctuations, environmental changes as well as the search for the true nature of humankind are fundamental questions that have rarely been so relevant as they are today. This exposition will put a focus to the relationship between humans and evolution, humans and culture, humans and environment.



3D photogrammetry model of the skeleton of an Eurasian straight-tusked elephant (*Palaeolodoxodon antiquus*) from Schöningen, realised by Ivo Verheijen.

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# HEY!!!

## THE QUATERNARY ISSUE BY COMICS AND SCIENCE

The results of all the investigations presented at INQUA2023 need to be exchanged, compared, and discussed and finally published in scientific journals to be shared.

For scientists, it's rather difficult to come out of their comfort zone. Our society needs to know what's happening on our planet, and to make science matter we must escape from our ivory tower. What better than a comic for reaching the public?

A very special, magnificently written and drawn story awaits you, set in a period dating back a few hundred thousand years, about what the life of a group of hominids was like, with special scientific consultation from scientists at the International Union for Quaternary Research.

Look in your congress bag to find it!

If you want to know more, join us:

*Saturday 15, from 18:15 to 19:15 COMICS@INQUA: The Quaternary Issue*

*Tuesday 18, from 14:45 to 16:15 COMICS@INQUA: HEY Signing copies*



ALESSIO SPATOLA  
2013

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# GENERAL INFORMATION

## REGISTRATION

It will be possible and recommended to register during the ICE BREAKER PARTY at the Botanical Garden on Thursday 13, from 17 to 19.

The first day of the conference, Friday 14, registration will be located at the viale (see map) and open 8.30-18.30

During the conference, the registration desk will be located on the ground floor of the Scienze della Terra building from 8.30 to 12.30 and from 15:30 to 18:30

Thursday 20 July, last day of the conference, it will be open 8.30-10:00

## WI-FI

Each delegate will be given a user name and password during registration. These credentials are strictly personal and should not be given to others.

EDUROAM is also available in the whole campus.

## CLOAKROOM

A cloakroom will be available on the ground floor of the Scienze della Terra building, close to the registration desk.

Friday 14 July 8.30-18.30

Saturday 15 July 8:30-18:30

Monday 17 July 8:30-18:30

Tuesday 18 July 8:30-18:30

Wednesday 19 July 8:30-18:30

Thursday 20 July 8:30-17:30

## SMOKING

Smoking is not permitted in Italy in any building. No smoking is allowed in any of the meeting rooms or public spaces. Smoking is allowed outside buildings and delegates are requested not to litter in these areas.

Smoking ban applies to all restaurants, bars, cafes and all public venues in Italy.

## SUSTAINABILITY

Since 2019 Sapienza has launched a series of initiatives for the reduction of disposable plastic, in line with the agreement signed by the Conference of Italian University Rectors (CRUI) with the Marevivo Association and the National Inter-University Consortium for Science (Conisma) aimed at joining the #StopSingleUsePlastic campaign.

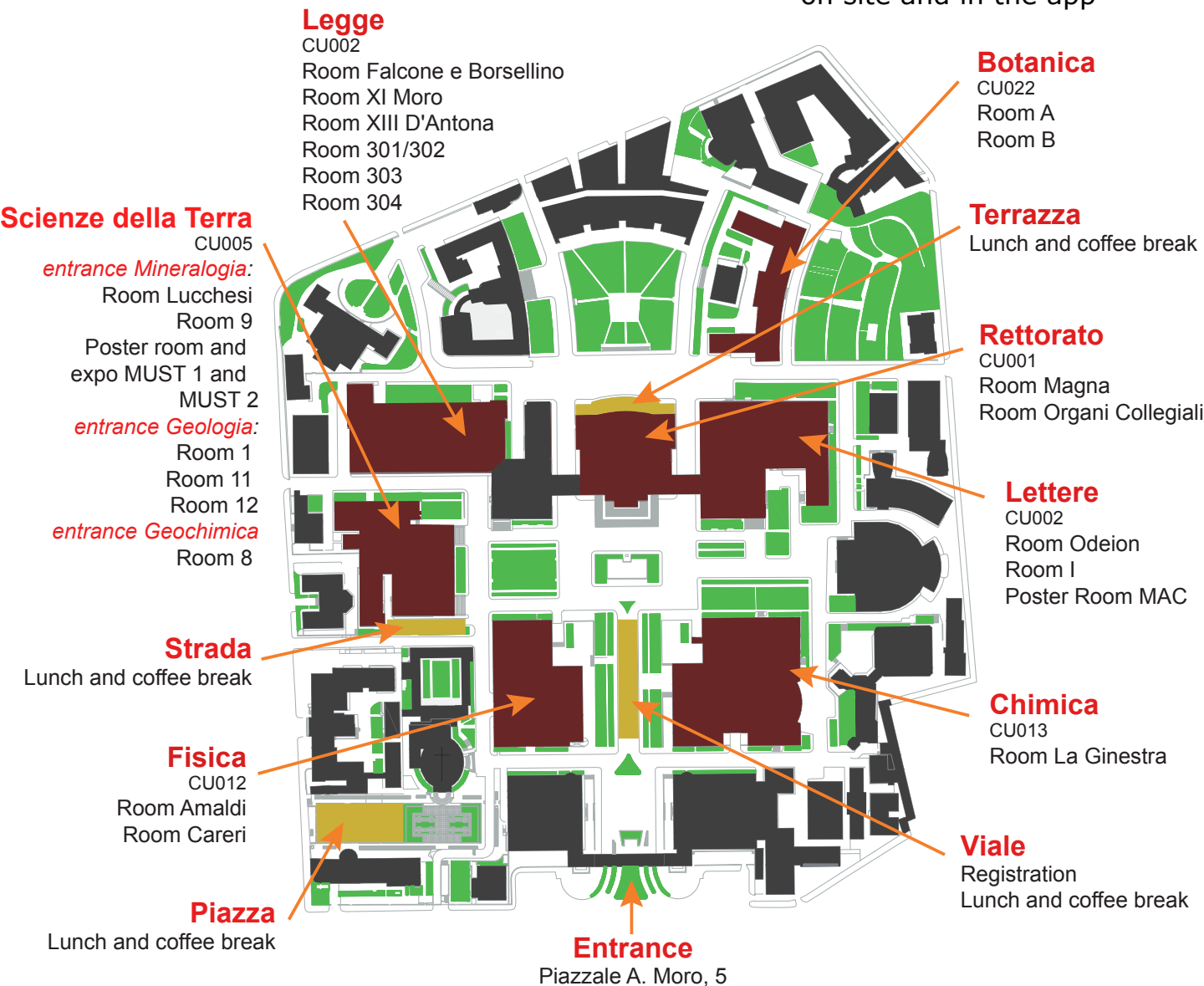
Separate waste collection within the University Campus is mandatory. Please help us to maintain our campus clean.

Tap water in Rome is safe for consumption, and there are thousands of old-style water fountains dotted around the city, where you can fill up water bottles.

There are water fountains where you can fill your water bottles in Sapienza. Bring your own water bottle!

# SAPIENZA UNIVERSITY MAP

Detailed plans of each building will be available on site and in the app



# SERVICES

University Hospital (on the other side of the road)



Lecture rooms

- ↑ Entrances
- Bank
- Church
- Police Station
- Under ground
- Bar
- Recharger
- Post office
- Water point
- Taxi





# XXI INQUA CONGRESS

"TIME FOR CHANGE"