

QU
UATERNARY
ERSPECTIVES

The INQUA
Newsletter



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From the President of INQUA

The Relevance of the Quaternary period 3

News of the Quaternary

Mission and Activities of the INQUA 5

Meet the new Executive Committee 6

Meet the new ECR Committee 8

Quaternary Environments and Humans: a new journal 10

INQUA Roma 2023: Final numbers and our goodbye 12

INQUA ECR workshop on challenges in Quaternary
fluvial geomorphology and geochronology 15The BoostEPD project: bringing together
the European terrestrial paleoecological communities 16**From the Commissions****Coastal and Marine Processes (CMP)**

CMP Updates December 2023 18

Stratigraphy and Chronology (SACCOM)

SACCOM activities and new projects 19

Humans and Biosphere (HABCOM)

HABCOM Update December 2023 20

Palaeoclimate (PALCOM)PALCOM's objectives and engagements
for the current inter-congress period 22**Terrestrial Processes, Deposits and History (TERPRO)**

TERPRO new officers and activities 24

The Great Travelers: Voyages to the Unifying Earth 26

Report of INQUA Summer School
on Active faults and Volcano-Tectonics 28**A view of the World**

FRANCE - The AFEQ-CNF INQUA activities in the first half of 2024 30

Quaternary International

New Releases 32

Cover photo: View from The Blockhouse of Mont des Fourches (Col de la Bonette, French Alps) to the NE. Erosion and sedimentation shape this rapid-evolving landscape at more than 2,000 m elevation. This was a stop during the TERPRO PATA Days 2022 excursion (CC BY-SA 4.0 Public License).

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QUATERNARY PERSPECTIVES
is the newsletter of



INQUA
INTERNATIONAL UNION
FOR QUATERNARY
RESEARCH

Established in 1928, INQUA is the representative body for Quaternary science worldwide. INQUA is dedicated to removing barriers and to fostering diversity and inclusivity by prioritising funding for early career and developing country researchers to enable their participation in the international scientific networks that INQUA supports. INQUA promotes – and operates according to – a philosophy of inclusivity, not discriminating against any individual on the basis of race, colour, religion, gender, gender identity or expression, sexual orientation, genetics or disability. We encourage you to join INQUA through any of its Commissions, and contribute to the development of Quaternary science worldwide.
inqua.org/about

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The Relevance of the Quaternary period

In the continuum of time, the Quaternary Period stands as a pivotal chapter, offering profound insights into our planet's history and the trajectory of evolution. It is becoming more and more clear that it is not distant, relegated to the annals of the past, holding immense relevance in our contemporary world. The Quaternary period, with its last 2.56 million years, comprises an invaluable repository of knowledge that not only unravels the mysteries of our past, but also bears crucial significance for our present and future endeavors.

THE PAST AS A TESTAMENT FOR THE FUTURE

The Quaternary witnesses the alternation of multiple glacial-interglacial cycles, the shaping of our modern landscapes, and the expansion, retreatment and extinction of various human, animal, and plant species. Its study is a profound exploration that elucidates the interconnection of our planet's systems and how the current state of the Earth originated.

One of the most critical aspects of studying the Quaternary lies in understanding climate changes that characterize it. By analyzing geological records and reconstructing ancient climates, it is possible to obtain crucial data that helps to contextualize and predict contemporary climatic patterns. As we are dealing with the climate change today, these insights become indispensable in formulating informed strategies for mitigation and adaptation.

Moreover, the Quaternary offers a treasure of



biodiversity information. By examining fossils, ancient and environmental DNA, and studying past ecosystems, the rise, fall, migration of species can be traced, providing invaluable lessons on adaptation, resilience, and the impacts of environmental shifts. In a world facing a strong biodiversity loss, these lessons serve as beacons guiding conservation efforts and the restoration of ecosystems.

Furthermore, the Quaternary is not just a tale of geological changes and past life; it is a mirror reflecting the intricate relation between human civilization and its environment. Understanding how our ancestors adapted to environmental challenges during this period can guide our approaches to contemporary issues such as resource management, sustainable living, and the resilience of human societies in the face of environmental upheavals.



In the technological age, where innovations unfold at a rapid pace, the Quaternary beckons us to pause and reflect. Its study encourages an interdisciplinary approach, bridging disciplines such as the geological ones (e.g. paleontology, seismology, geomorphology, stratigraphy, geochronology) with archaeology, climatology, genetics, and modelling. It fosters collaboration and a holistic understanding of our planet's history, enriching our perspectives and guiding our decisions.

While the Quaternary lies in the depths of time for many citizens, its lessons resonate powerfully in our present context. Dissemination served, serves, and will serve as a compass, guiding our society through the complexities of our world, offering wisdom garnered through millennia. Embracing its study isn't merely a journey into the past; it is an investment in thinking a more informed, sustainable, and resilient future.

INQUA: A HUB FOR EXCHANGE AND OUTREACH

The role of INQUA is of primary importance not only in research, but also in the global outreach mission, as our union serves as a unifying force in the realm of Quaternary studies, fostering collaboration, promoting research, setting standards, and advocating for the utilization of Quaternary sciences in addressing contemporary global challenges. Its efforts contribute significantly to advancing our understanding of Earth's history and enhancing our ability to address present-day issues related to sustainability,

environmental change, and societal resilience.

As we stand at the crossroads of history and the present, the Quaternary invites us to embrace its teachings. Its echoes resonate not merely as relics of the past but as guiding principles that shape our present actions and future



aspirations.

A NEW START FOR THE CHALLENGES AHEAD

The XXI INQUA Congress – time for change - held in Rome (Italy) last July, stands as a testament to the resounding success and global significance of Quaternary research. Hosted in a city rich in history, opened at the presence of the President (Sergio Mattarella) and of the Minister for Research (Anna Maria Bernini) of Italian Republic, this congress served as a vibrant platform for scientists, researchers, and experts from diverse disciplines to converge, exchange ideas, and delve into the complexities of Earth's past. It offered a multitude of sessions, workshops, documentary, exhibitions, field trips and social events that not only shown the richness of Quaternary studies but also underscored their relevance in shaping a more informed and sustainable future. It had also a pivotal and unexpected role in outreach, with a surprising resonance in the social media and in Italian televisions and newspapers.

Looking ahead, the XXII INQUA Congress – Quaternary Sciences and Societal Services - set to take place in Lucknow (India) in February 2027 holds immense promise. India, with its diverse landscapes, rich cultural heritage, traditional and emerging scientific community, serves as an ideal backdrop for fostering discussions and advancements in Quaternary science. In essence, the upcoming INQUA Congress in Lucknow holds the promise of being a transformative event, uniting international experts, inspiring new research directions, and reinforcing the pivotal role of Quaternary science in shaping a sustainable and equitable future for our planet.

Laura Sadori¹
INQUA President

¹ Sapienza University of Rome, Italy
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Mission and Activities of the International Union for Quaternary Science

INQUA's basic goal is to promote improved communication and international collaboration in experimental and applied aspects of Quaternary research, in order to contribute in practical ways to an evaluation of the scale and rates of global environmental changes during the recent geological past.

INQUA considers that a deep knowledge of global developments during the past 2.58 million years (the Quaternary geological period) provides the essential template for assessing the significance of current and predicted global environmental shifts. The Quaternary period witnessed the evolution of modern humans against a backdrop of recurrent advance and retreat of glaciers and continental ice sheets, major oscillations in global sea level, abrupt reorganizations of global meteorological and oceanographic circulation patterns, and a range of other physical and biological adjustments to climate change. The spectrum of environmental changes reflected in Quaternary geological records is likely to encompass the conditions the world may experience in the foreseeable future. Quaternary records therefore offer important base-line data for evaluating a number of the issues at the forefront of today's environmental concerns, such as quantifying future ice sheet decline and sea-level rise, ocean warming and acidification, increasing climatic instability, extinction of plants and animals, groundwater recharge rates, volcanic and tectonic unrest, rates of adaptation (e.g. evolutionary) to abrupt environmental change, and so on. Each of these needs to be evaluated in the longer term, not just in the instrumental period, to be properly understood.

INQUA promotes greater understanding of the importance of Quaternary environmental and archaeological records in two ways, by engaging with international dialogue and activities concerned with modern global environmental problems, and by funding activities that clarify the background context to these problems, within the Quaternary timescale. International Engagement INQUA is an independent member scientific union of International Council for Science; as such it not only adds critical mass to the Geo-Unions sub-cluster of International Council for Science with which it is associated, but can provide independent advice and influence on matters best assessed within a Quaternary time-frame.

INQUA is engaged in the planning and evolution of a number of emerging global initiatives, such as Future Earth, mainly through the regional offices for Latin America and Africa, and in initiatives being proposed by IUGS, such as Resourcing Future Generations, which includes a focus on groundwater resources, and which may in turn link in to the Future Earth programme.

INQUA funds a number of specific international projects and Focus Groups (see below) which are advancing knowledge in key environmental areas, such as climate modelling, biodiversity, hazard assessment, human origins and environmental impacts, and species extinction rates.

INQUA provides a liaison and advisory body for IUGS on matters concerned with Quaternary stratigraphic subdivision, nomenclature and good practice. This feeds through the Subcommittee for Quaternary Stratigraphy (SQS), which reports to the International Commission on Stratigraphy (ICS) of the IUGS.

INQUA informs the wider scientific community of important advances in the study of geological, environmental and archaeological events through its official journal, *Quaternary International*, published by Elsevier. The journal was inaugurated in 1989 and in early 2014 published its 323rd volume.

INQUA is run by an elected Executive Committee which reports to an International Council comprised of one national representative for each of the 53 national or regional Members of INQUA, though only the representatives of fee-paying members hold voting rights. The International Council oversees the actions and decisions of the Executive Committee, and approves INQUA's statutes which govern all INQUA's structure and activities.

INQUA holds an International Congress once every four years, which is open to participation by all interested scientists, and which show-cases recent developments in the field. The location of the congress is decided in advance by the International Council, which meets on three occasions during each congress. There is a high participation in the congress by scientists from developing countries and by Early Career Researchers, for which funding support is supplied from INQUA resources.

Meet the new Executive Committee



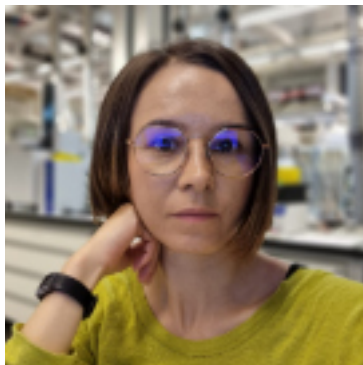
INQUA President

[Laura Sadori](#)

Sapienza University Of Rome, Italy

Laura Sadori is an Italian palynologist and archaeobotanist. She carries out palaeoecological studies, devoting herself to researches aimed to palaeoenvironmental and

palaeoclimatic reconstructions in the Mediterranean basin. She aims to evaluate the degree of human impact and of the changes induced by climate. She cooperates with archaeologists, geologists and architects in the study of a number of Italian and foreign historical and prehistorical sites.



INQUA Secretary

[Aritina Haliuc](#)

Eötvös University, Budapest, Hungary

Aritina Haliuc holds a PhD in Geography from the University of Suceava, she is interested in unravelling the Earth's past, and how humans have changed its face.

She nurtures a great interest in knowledge sharing, transfer and raising awareness about the state of the environment and the world we live in and the actions that should be taken to protect this natural inheritance.



INQUA Secretary General

[Eniko Magyari](#)

Eötvös University, Hungary



INQUA Treasurer

[Freek Busschers](#)

TNO - Geological Survey Of The Netherlands, The Netherlands

Freek Busschers is a scientist and project manager at the Department of Geomodelling at TNO - Geological Survey of the

Netherlands. Freek's research mainly focusses on the development of the southern North Sea Basin during the Quaternary. Looking for fossils as a young boy during holidays in France initiated his interest in the prehistory from a very early age. Freek finished his PhD on the Middle and Late Pleistocene development of the Rhine-Meuse system at the Vrije Universiteit Amsterdam in 2008 and worked at TNO - Geological Survey of the Netherlands ever since. He currently works on the reconstruction and dating of the now buried southern North Sea Basin paleo landscapes by using the Survey's extensive borehole and sediment provenance databases and by applying a range of dating techniques such as luminescence dating and biostratigraphy. Freek is an active INQUA member and regards the organisation essential for connecting different Quaternary groups and disciplines all over the world.



INQUA Vice President

[Maria Fernanda Sanchez Goni](#)

EPHE, Paris Science Lettres University, France

Maria Fernanda Sanchez Goñi is Professor of Paleoclimatology at the Ecole Pratique des Hautes Etudes-Paris Science Lettres (EPHE,

PSL University) and works at the EPOC laboratory (Environnements et Paléoenvironnements Océaniques et Continentaux) of the University of Bordeaux. Expert in the study of pollen grains preserved in deep-sea sedimentary sequences, Maria Fernanda works on the dynamics of climate changes, glacial-interglacial and abrupt cycles, over the last

million years and, in particular, on the interaction between vegetation-atmosphere-ocean-ice caps, and the impact of these changes on human evolution. He has led or participated in numerous national and international projects such as the ERC Advanced Grant TRACSYMBOLS, the RESOLUTION project funded by the European Science Foundation and the ACER project (Abrupt Climate Changes and Environmental Responses) funded by the International Quaternary Association (INQUA). He is currently President of the French Association for the Study of Quaternary (AFEQ) and a member of the Milutin Milankovitch Medal Committee of the European Geophysical Union (EGU).



INQUA Vice President

[Pradeep Srivastava](#)

Indian Institute Of Technology Roorkee, India

Pradeep Srivastava is a Quaternary Geologist trained in sedimentology and luminescence dating as applied to varied settings of continental climate and tectonics.

Largely, Pradeep utilizes the river systems to evaluate the impact of climate variability and tectonics on landscapes. Himalaya, Ganga foreland, Namib Deserts and Alluvial plains of SE United States have been major geographic areas of his contributions where he develop records of neotectonic evolution, extreme hydrological events, paleoclimate, palaeoseismology, glacial chronologies etc.



INQUA Vice President

[Kathleen Nicoll](#)

University Of Utah, USA

INQUA Past President

[Thijs Van Kolfschoten](#)

Leiden University, The Netherlands

Thijs van Kolfschoten studied Geology and Biology and obtained his PhD in Palaeontology at the Institute of Earth Sciences, University of Utrecht (The Netherlands). After a research position at the Institute of Palaeontology, University of Bonn (Germany) he moved to Leiden University (The Netherlands) where he is working as Professor in Palaeozoology and Quaternary Biostratigraphy at the Faculty

of Archaeology.

His main fields of interest are Quaternary mammals, biostratigraphy, palaeoecology and taphonomy. His palaeontological research focuses on continental deposits with an age that ranges from the Early Pleistocene until the early Holocene. A major research project is the study of the mammalian vertebrate fossils from a sequence exposed at Schöningen (Germany); a sequence that plays an important role in the debate on the late Middle Pleistocene climatic and faunal history. The Palaeolithic sites of Schöningen yielded a large amount of mammalian remains with features that indicate exploitation by Lower Palaeolithic hominins. The study of these features is also part of the current research project.

During the past decade, changes in Late Pleistocene and early Holocene ecosystems in Europe north of the Alps have been investigated in close collaboration with Russian colleagues; past projects are: The evolution of the mammalian fauna and flora in Western, Central and Eastern Europe during the Pleistocene – Holocene transition (25 - 10 kyr B.P.) combining well-dated flora and fauna data and The Collapse of the Mammoth Steppe ecosystem (COMSEC) investigating the disintegration of the Mammoth Steppe ecosystem at the level of faunal assemblages as well as at species level. Currently, studies on the Late Pleistocene faunal evolution focus on eastern Siberia.

Thijs was President of the INQUA Subcommittee (now Section) on European Stratigraphy (SEQS) from 1995 to 2003, and he was President of INQUA Netherlands from 1999 to 2008 when he was the national Delegate representative at the INQUA International Council meetings in Durham (1999), Reno (2003) and Cairns (2007). He has been regional Editor (Europe) of Quaternary International from 2003 to 2015. In addition, he has been a member of SACCOM from 2003 to present, and Secretary of SACCOM from 2011 to 2015. He was member of the steering-committee of APEX (Arctic Palaeoclimate and its Extremes), which forms an umbrella programme for European Arctic palaeoclimate research. He was secretary of the IUGS Subcommittee on Quaternary Stratigraphy, member of the scientific advisory board of Senckenberg Research Institute (Frankfurt, Germany) and the Centre of Archaeological Sciences (Leuven, Belgium).

Currently, Thijs van Kolfschoten is the director of a well-equipped laboratory for palaeozoological and archaeozoological studies at the Faculty of Archaeology, Leiden University and head of the Bioarchaeology Research Group.



Meet the new ECR Committee



ECR Chair

Sudhir Bhadra
Indian Institute Of
Science, Bengaluru, India

Sudhir is a postdoc at the Indian Institute of Science, Bengaluru. He is a paleoclimatologist, working on the reconstruction of the Indian monsoon and

associated changes in the Indian Ocean during the Quaternary. His research uses micropaleontology and trace element and isotope geochemistry in biogenic carbonates as proxies



Palaeoclimate Commission Representative

Syed Azharuddin
Nagoya University,
Nagoya, Japan

Syed is a postdoc at Nagoya University, Japan. His research uses a combination of laboratory

experimentation with microfossils (foraminifera) and geochemical tools in marine sediment, speleothem and ice core samples to understand the consequences of climate change beyond the instrumental record. His ongoing research includes the following-

1. Changing carbonate chemistry (ocean acidification) leading to atmospheric CO₂ increase, sea surface temperature and deoxygenation history of the Arabian Sea using marine sediment records.

2. Studying the past variation in atmospheric nitrous oxide using the Antarctic ice cores.

3. Reconstruction of past air temperature on a multidecadal scale using fluid inclusion isotopes in the stalagmites of Hoshino Cave, Minami-Daito Island, Japan.

Coastal & Marine Processes Commission Representative

Michaela Falkenroth
Institute Of Applied Geoscience, TU Darmstadt, Germany



During my Ph.D., I focused on Quaternary sea-level research based on geomorphological landforms. I have worked on the improvement of beachrock as a sea-level indicator by sedimentological facies analysis and also studied the ichnology of

beachrock and coastal (bioerosion) notches. My main expertise includes sedimentology, carbonate geochemistry, geomorphology and sea-level research.



Coastal & Marine Processes Commission Representative

Udita Mukherjee
University Of Wisconsin
Madison, USA

As a trained geologist specializing in sedimentary geology, stratigraphy, sea level science and sequence

stratigraphy, my research revolves around my enduring fascination with sea level change and sediment transportation. I focus on the reconstruction of past sea levels through diverse proxies and techniques across various temporal and geographic scales. These reconstructions provide valuable insights into past ice sheet configurations, palaeoclimate conditions, and vertical movements of the Earth



Humans & Biosphere Commission Representative

Becky Brice
USGS, USA

I'm an earth systems geographer using tree rings and lake sediments to study

paleoclimate, hydroclimatic processes, and the interaction between the climate and human systems. I specialize in dendrochronological reconstructions over the Common Era and my research aims to understand the role of climate variability in changing water resources.



**Humans & Biosphere
Commission
Representative**
Prachi Joshi
Sharma Centre For
Heritage Education, India

I'm an archaeologist currently working on the Palaeolithic hominin behaviour in the Middle Wainganga basin, Central India. My

research is focused on the behavioural implications of the distribution of Palaeolithic sites and the technological strategies noted during the Acheulian and the Late Palaeolithic phase.



**Stratigraphy &
Chronology Commission
Representative**
Opeyemi Adewumi
Center For Geosciences,
University Of Coimbra,
Portugal

My academic credentials include degrees in Archaeology, Geography, and Environmental Studies. I

have also received trainings in geoarchaeology, micromorphology, and soil analysis. My interest in human-environment interactions and my trainings, qualify me to be an expert in the aforementioned domains. Currently, I am working on geological and archaeological stratigraphy spanning all chronologies using micromorphological techniques.



**Stratigraphy &
Chronology Commission
Representative**
Aditi Dave
Babes-Bolyai University,
Cluj-Napoca, Romania

I'm a postdoctoral researcher, with expertise in the application and development of trapped charge techniques of luminescence and

electron spin resonance, not only as classical dating methods but also as a provenance tool.

My primary research interests lie in the application of these techniques to gain insight into the timing, rates and processes of landscape-climate interaction during the Quaternary.



**Terrestrial Processes,
Deposits & History
Commission
Representative**
Paula Marques
Figueiredo
North Carolina State
University, USA

I am a geologist that researches Active Tectonics, Neotectonics, and Paleoseismology in

distinct tectonic settings in the world. My research focuses on the characterization of the deformation in sediments, rocks, and landforms. For that I conduct field surveys, frequently supported by remote sensing analysis, and when possible complemented with geophysical, geodetic, and geochronologic data.



**Terrestrial Processes,
Deposits & History
Commission
Representative**
Irene Puliti
University Of Chieti, Italy

I am working now as a post-doc at Chieti-Pescara University, Italy. I am a geologist working on active tectonics and

earthquake geology in extensional settings. My research interests focus on detecting tectonic signals from landforms by morphotectonics and deformed sediments through paleoseismological investigations

Andrea Zerboni¹, Silvia Bello², Fumie Iizuka³, Jan Kolář⁴, Thijs van Kolfschoten⁵

Quaternary Environments and Humans: a new journal for the INQUA community



It is always good to hail new editorial initiatives promoting the dissemination of Quaternary Sciences across the globe. In July 2023, during the INQUA Congress in Rome we had the privilege to launch *Quaternary Environments and Humans* ([QEHL](#)), the new INQUA and Elsevier journal.

QEHL is Open Access and as the new official journal of the INQUA its objectives are to publish high-quality scientific papers and promote the Quaternary sciences through a rigorous scientific approach and diversity, equity, and inclusion. The journal accepts for publication manuscripts with a special focus on recent advances on the long-lasting and multifaceted relationship between Quaternary climates, environments, humans, and other hominins.



AFFILIATIONS

¹Università degli Studi di Milano, Italy

²Natural History Museum of London, UK

³University of Missouri, USA

⁴University College London, UK

⁵Leiden University, The Netherlands

The journal will encompass interdisciplinary contributions, joining specialists from physical and natural sciences, archaeology, and humanities to explore the complexity of the human journey on Earth. General and specific contributions to the investigation of the full spectrum of scientific problems related to the multidirectional interactions between climate changes, modification of the physical environment and related biomes, and the evolution of human behaviour are welcome. Such contributions must be strongly interdisciplinary, and transdisciplinary, reporting on whether and how climatic and environmental changes have affected human biological and cultural evolution, and on the effects and consequences of human (and other hominin) actions on planet Earth in the last 2.6 Ma, thus fueling the ongoing discussion on the early inception of human agency on surface processes, ecosystems, and climate.

QEH is considering for publication after peer-reviewing manuscripts dedicated to one (or more than one) of what we call the four pillars of the journal:

- Geoarchaeology: investigations addressed to understanding the climate-environment-human nexus during the Quaternary and the formation of archaeological contexts (site to landscape).
- Bioarchaeology: investigations addressed to understanding the drivers, processes and environmental changes affecting human adaptation to

new ecosystems and environments, as well as the effect of human evolution and cognitive behaviour on Quaternary ecosystems and environments.

- Material culture: investigations addressed to understanding human adaptations, decision-making and behavioural changes in association with changes in Quaternary climate, environments and ecosystem by examining technology and features.
- Modelling studies: investigations addressed to identifying, understanding and explaining environmental and social processes and events from a quantified multi-proxy perspective.

Research papers, review papers, invited papers, short papers, perspective papers, editorials and comments related to these topics are welcomed, as well as the submission of

proposals for special issues from symposia, workshops and meetings sponsored by INQUA and paper collections from specific research projects (see authors guidelines [here](#)). International and diverse editorial board members ([here](#)) are all active in their field and bring a wealth of knowledge and experience to your submission.

QEH is an open access journal, which means that all articles are freely available to read, download, and share. Please remind that there is no Article Publishing Charge for articles submitted before 30 June 2024. Submissions are open!



Francesco Latino Chiocci¹, Ilaria Mazzini²
(Chair and General Secretary of the XXI INQUA Congress)

INQUA Roma 2023

Final numbers and our goodbye



The XXI INQUA Congress took place in Rome (Italy), July 14-20, 2023, on the 70th anniversary of the IV INQUA Congress. The congress was inaugurated by the President of the Italian Republic and the Minister of University and Research in a formal ceremony held in the auditorium of the Sapienza University, thus recognizing the social importance of Quaternary studies to “unravel the recent geological past to understand the present natural process and shape a long-lasting sustainable future” (this was the banner displayed at the congress entrance). The 14 parallel sessions (for a total of 142 sessions) were well-attended by about 3,000 researchers. Some of the most popular sessions were those focusing on paleoclimate, human evolution, including paleogenomics, geohazards, and quaternary sciences and society, consistently with the congress theme “Time for Change”.

The university venue created a familiar and informal atmosphere that fostered both scientific exchanges and personal interactions among researchers from 82 countries, often in the shadow of the mammoth who served as the event’s mascot and that was named “Thelonious Tusk” after a name contest among the participants.

Every day, after the lunch break (with over 10,000 hot meals served), highly attended and interesting plenary lectures were held: “Quaternary Earth’s Gradient” by Carlo Doglioni,

AFFILIATIONS

¹Sapienza University of Rome, Italy

²National Research Council (CNR), Italy

“Speleothem based chronology and Quaternary climate change” by Hai Cheng, “An ecosystem reconstruction revolution using ancient sedimentary DNA” by Inger Greve Alsos, “The Pliocene-Quaternary evolution of the Arctic: the messy transition from forest to tundra, and now our return to the Pliocene” by Julie Brigham-Grette and “Geology floods in Himalaya” by Pradeep Srivastava. The organization was able to rely on 120 student volunteers who, besides working on the organization, actively participated the scientific



sessions. Many side activities were organized, including four evening events: the ice-breaker party at the Botanical Garden of Rome, the ECR party that was highly attended, the IC party at the Acquario Romano and the social dinner organized at the fabulous Villa dei Quintili along the Appia Antica. Special attention was paid to the attending families with entertainment and animation activities organized for more than 60 children. Four exhibitions were designed for the congress: “Schöningen: a throw for the ages” directly from Lower Saxony (Germany), “A journey through the central Apennine: a look at the Gran Sasso” with photos and paintings of the Gran Sasso, “Rome before Romans - Pleistocene mammals in downtown Rome” with specimens selected from the MUST (University Museum of Earth Science) collection, and in particular “1953 IV INQUA Congress: 70 years later”, featuring

original materials from that event kindly provided by ISIPU and a special focus on Milankovich’s controversial participation. The attendees could join guided tours for congress participants to 11 Sapienza University museums and two screenings of the scientific movies “Secrets of the Dead: The Sunken Basilica” by Pascal Guerin and “2100: there is no time to waste by Fabrizio Antonioli”. The comic “Hey” was produced and especially designed for the congress, about what the life of a group of hominids was like. The cartoonist, Alessio Spataro, participated to the congress for an amazingly long copy signing event. The comic was part of the congress kit, along with half a kilo of “fregula”, a pasta typical of Sardinia. The extensive excursion program (6 pre-congress, 2 post-congress, and 7 on the inter-congress Sunday) was well attended and appreciated.

All these activities received significant coverage in national press and TV, as well as on social media, with 30,000 interactions and 4,000 followers on YouTube, X, and Facebook.

The XXI INQUA Congress (Time for Change) ended on July 20, 2023, with a festive ceremony (including a collective “pizzica” dance) and the handover to the Indian delegation, with the participation of the ambassador of India.

Among the most significant results is the high percentage of Early Career Researchers (ECRs), accounting for 47% of the participants, many of whom served as session conveners. INQUA supported the participation of over 200 ECRs





with support grants and 14 ECRs and DCRs with INQUA fellowships. Five special issues (and possibly more unknown to the organizers) emerged from sessions held during the congress.

During the congress, the President of the Executive Committee for the next inter-congress period was elected, Prof. Laura Sadori from Sapienza University, making the whole community of Italian Quaternary scientists very proud.

The XXI INQUA Congress in Rome has been an extraordinary journey of scientific discovery, collaboration, and exchange of ideas. Through sessions, presentations, and discussions, we have fostered a platform for the exchange of knowledge, ideas, and insights that will undoubtedly have a lasting impact on the field of Quaternary science. Back to our

respective corners of the globe, let us carry with us the knowledge and relationships forged here. The connections we have made, the innovative ideas we have encountered, and the collaborative opportunities that have emerged during this congress will serve as the foundation for future advancements in our field.

In conclusion, the XXI INQUA Congress was not only a celebration of our past but also a glimpse into a promising future. We hope that the spirit of collaboration, exchange, and discovery that we have witnessed here will continue to drive progress and inspire generations to come.

And until we meet again at the XXII INQUA Congress in India, let's continue to explore, discover, and protect our Earth's Quaternary heritage.



Michelle Fame¹, Elizabeth Orr²

INQUA ECR workshop on challenges in Quaternary fluvial geomorphology and geochronology

WORKSHOP NAME:

Challenges in paraglacial fluvial terrace geochronology

WORKSHOP ORGANISERS:

Michelle Fame, Amherst College, USA; Elizabeth Orr, University of Durham, UK; Rebekah Harries, University of Durham, UK

An INQUA workshop for early career researchers (ECRs) focused on challenges in Quaternary fluvial geomorphology and geochronology was held in Aviemore, Scotland from July 23–26, 2023. The workshop brought together three senior scientists and twelve early career researchers from Chile, Brazil, France, Canada, the United States and the United Kingdom all interested in this research area. ECR participants presented short talks on their research under the following themes:

1. the paraglacial geomorphology of Scotland,
2. remote sensing, landform mapping and topographic analysis,
3. novel applications of Quaternary dating methods,
4. alluvial systems and climate.

Methodological workshops on optically stimulated luminescence dating and cosmogenic radionuclide dating as applied to Quaternary fluvial terrace sequences were delivered by L. Owen (North Carolina State University, USA) and I. Larsen (University of Massachusetts Amherst, USA). C. Ballantyne (University of Saint Andrews, UK) gave a keynote talk on the development and future directions of paraglacial geomorphology research. M. Fame (Amherst College, USA), E. Orr, and R. Harries (Durham University, UK) led a field excursion to the Glen Feshie fluvial terrace sequences in the Cairngorm Mountains and a series of discussions on challenges impacting ECRs. Following the workshop, a few participants remained with the workshop organisers and provided field support during their field season in Glen Feshie. For more information on this event please see our website: <https://www.terracegeochronology.com/>



Fig. 1: The workshop's logo artwork created by R. Harries (University of Durham, UK).



Fig. 2: E. Orr (University of Durham, UK), P. Vergara (Pontifical Catholic University of Chile, Chile), and I. Larsen (UMass Amherst, USA) collect radiocarbon and OSL samples from a fluvial terrace in Glen Feshie in July 2023.

AFFILIATIONS

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The BoostEPD project: bringing together the European terrestrial paleoecological communities

Current global changes raise pressing environmental questions linked to the loss of biodiversity and ecosystem resilience. With increasing rates of environmental changes, and rising abiotic and biotic novelty, securing the services ecosystems can provide will be a major challenge of the current century. In this context, assessing ecosystem responses to environmental changes is paramount to develop appropriate conservation, mitigation and adaptation measures.

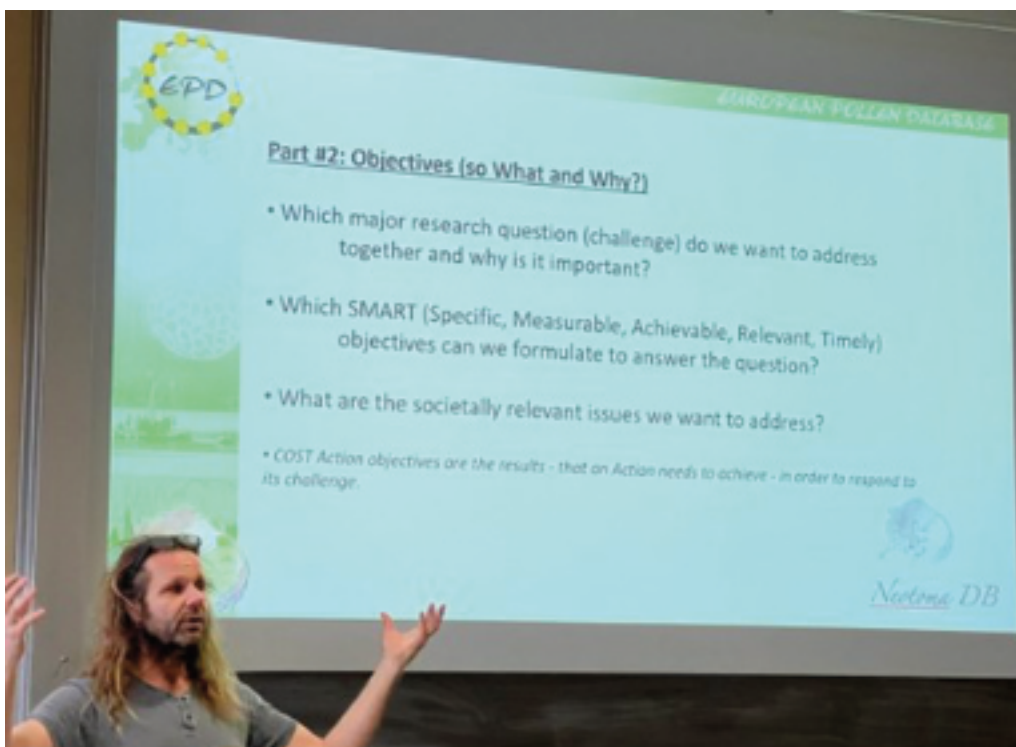
Palaeoecological databases have become an important research tool to explore long-term ecosystem changes at different spatial and temporal scales, far exceeding those of monitoring data, while also being important data repositories and valuable educational tools. The European Pollen Database (EPD), one of the largest palaeoecological

databases worldwide has supported science for more than 30 years, curating both pollen and associated data on and near the Eurasian continent. However, the EPD - as well as other pollen databases - lacked direct connections with other proxy-data types, which precluded exploring complex interactions between different components of ecosystems.

The database-infrastructure gap was recently filled by the Neotoma database, which allows storing different proxy data with common data standards. The EPD community participated in the development of Neotoma and joined as a constituent database completing data migration in spring 2022. Several palaeoecological communities joined in North America the Neotoma project since its launch in 2009, with for instance pollen, diatoms, ostracods, vertebrates, and testate amoebae all well represented. By contrast, in Europe

the EPD largely remains the only active palaeoecological community curating open data for Europe in Neotoma.

Building on the momentum generated at a recent PAGES supported EPD Open Science Meeting (June 2022), the BoostEPD project aims at bringing members from the diverse set of paleoecological communities together and foster combined analyses of continental datasets. BoostEPD focuses on training new Neotoma data stewards to help curate and upload existing proxy data into new and existing constituent databases and engage with problems and particularities of other palaeoecological communities. The overall long-term goal is the



Thomas Giesecke illustrates topics to be addressed in the break-out groups.

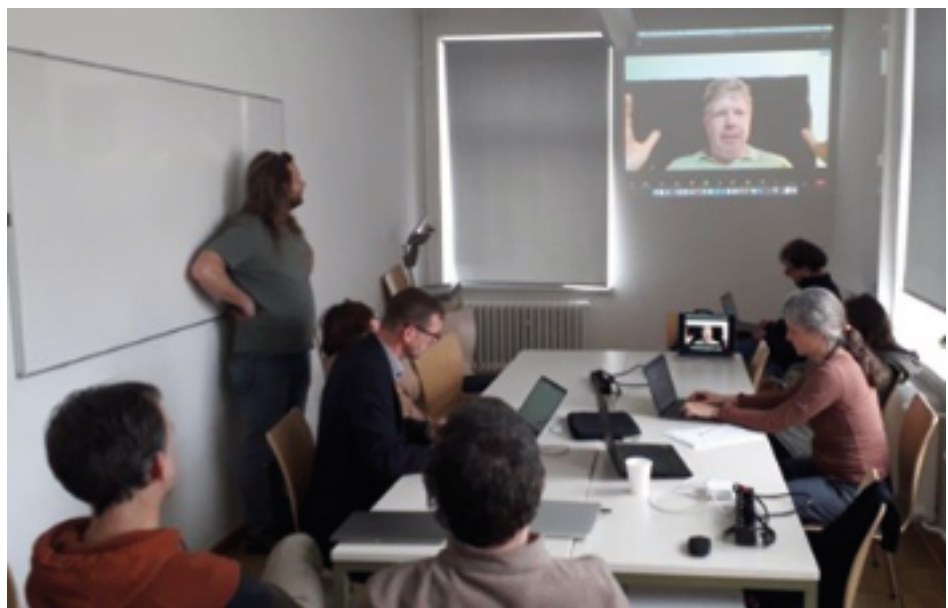


Discussion on laboratory equipment at the host institution of the BoostEPD kick-off meeting (University of Göttingen, Germany). From left to right: Lyudmila Shumilovskikh, Anneli Poska, Mollie Mills, Enikő Magyari, and Laura Hemmingham.

integration of the diverse set of European palaeoecological data into Neotoma and their joint analysis to gain a better understanding of whole ecosystem change on the European continent during the Quaternary.

To start the process, we invited 33 scientists representing different data communities (>50% females) from ten European countries and including 12 early-career researchers at the Department of Palynology and Climate Dynamics (University of Göttingen, Germany). During the first day, the goal, major research questions and approach was discussed in three rotating break-out groups, which allowed a diversity of viewpoints to be expressed. On the second day, we provided hands-on training for new Data Stewards to upload data into Neotoma. In addition, we included two workshops: one on data upload and stewardship and another one in the use of the NeotomaR package. The meeting was a success in many respects, as it mobilised communities (e.g. Chironomids) to

join Neotoma, supported the Global Fire Database in their move towards Neotoma and stimulated the writing of a COST proposal.



Remote liaison between EPDBoost participants and Simon Goring (Neotoma Paleoeological Database). From left to right: Petr Kuneš, Thomas Giesecke, Steffen Wolters, Martin Theuerkauf, Abraham Vojtěch, and Elisabeth Dietze.

Alessio Rovere^{1,2}, Shilpa Pandey³, Andrew Green⁴, Udit Mukherjee⁵, Michaela Falkenroth⁶

CMP Updates December 2023

The inauguration of the Coastal and Marine Processes Commission during the INQUA conference in Rome in July 2023 marked a pivotal moment. A new board of Officers will now steer the CMP's trajectory for the 2023-27 Inter-Congress period.

- **Alessio Rovere** (President)
- **Shilpa Pandey** (Vice-president)
- **Andrew Green** (Secretary)
- **Udit Mukherjee** (ECR Committee Officer)
- **Michaela Falkenroth** (ECR Committee Officer)

To kickstart our operations, the commission began by transitioning social media and mailing list responsibilities from the previous administration, simultaneously initiating the call for project proposals.

We're excited to reveal the upcoming endeavors spearheaded by the CMP Commission in the coming year. Our focus will center on overseeing two pivotal projects, PALSEA-next and OnSea, alongside a skills enhancement grant (CoasDis).

PALSEA-next: This project aims to deepen our comprehension of historical sea-level alterations in terms of magnitude, rates, and underlying processes. Enriching this understanding holds the potential to refine projections regarding future ice sheet dynamics, sea-level fluctuations, coastline transformations, and the historical implications of sea-level shifts on societies. Spanning an interdisciplinary spectrum, PALSEA-next aims to unite researchers across proxy-reconstruction and geophysical process modeling domains. Crucially, this initiative seeks to broaden its purview to encompass the coastal and marine archaeology community.

Leading this project will be Matteo Vacchi, Tamara Pico, Juliet Sefton, and Lauren Gregoire.

OnSea: Aiming to foster a robust interdisciplinary community comprising Ph.D., DCR, ECR, and SS individuals, OnSea congregates those fascinated by the Holocene's geomorphological evolution and human coastal occupation. Building upon the success of CMP's NEPTUNE project, OnSea endeavors to create a network of geoscientists and archaeologists—both seasoned and emerging—focused on pioneering techniques for analyzing past landscape evolution on a broader scale, extending from shorelines to continental shelves. Leading this venture will be Gaia Mattei, Claudia Caporizzo, Ana Novak, Matthieu Giame, and Driss Chahid.

CoasDis: Set to unfold as a three-day workshop tailored for postgraduate students and early career researchers captivated by unraveling the geological footprint of Holocene coastal disasters. Situated in Khao Lak, Thailand—an ideal location with a historical rebound from the 2004 Indian Ocean tsunami—the workshop promises rich geological narratives and proximate field sites along the Andaman Sea coast. Hosting up to 40 participants, this experience will provide a holistic understanding of coastal disaster records within the Holocene epoch. Participants can anticipate a meticulously curated

program blending theoretical insights, practical fieldwork, and engaging discussions. The workshop will be co-sponsored by the Earth Observatory of Singapore (EOS). Leading this endeavor will be Adam Switzer, Annie Lau, Natt Leelawat, Charlie Bristow, James Terry, Wenshu Yap, and Rahul Kumar.

We look forward to the promising contributions and collaborations these initiatives will bring to our shared exploration of coastal and marine processes.

AFFILIATIONS

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Lewis A. Owen¹, Axel Cerón González², Pierluigi Pieruccini³

SACCOM activities and new projects

[SACCOM](#) has continued to help promote and coordinate international cooperation and integrate regional and national chronostratigraphic nomenclature through stratigraphic methods and dissemination of stratigraphic knowledge. SACCOM's mission is to study the Quaternary period through stratigraphy and chronology and provides a forum to discuss and establish stratigraphic investigations and classification throughout the world. These activities involve several hundred scientists and more than one hundred early career researchers from distant parts of the world. The Commission Officers continue from the last Inter-Congress period and include

- **Lewis Owen** (President)
- **Adele Bertini** (Vice President)
- **Helen Roberts** (Vice President)
- **Susan Ivy-Ochs** (Secretary)

INQUA through SACCOM continues to support SEQS (Section on European Quaternary Stratigraphy), which is a group of Quaternary scientists within INQUA that has been active since the 1980s. Europe is the cradle of Western-oriented Quaternary science and has a long history in geological mapping and scientific investigations of Quaternary marine and continental sedimentary successions. This tradition needs further scientific collaboration and correlation, connecting scientific communities and researchers from different regions of Europe, involving and funding early career researchers (ECR; less than 8 years out of their PhD) and developing countries researchers (DCRs) to participate in the proposed activities. For these reasons, SEQS, led by Pierluigi Pieruccini (University of Torino), applied for support for the 2023-2027 Inter-Congress Period with a project entitled:

"EQ – European Correlation of Quaternary Stages Boundaries", which was recently funded (Project EQ 2444). In the framework of this project, the SEQS 2024 meeting will take place in Italy (Gavorrano, Tuscany, UNESCO Geopark) from September 28 to October 2 and includes two days of indoor meetings (oral and poster presentations) and a three-day-long fieldtrip around Southern Tuscany focussed on "Quaternary stratigraphy and terrestrial carbonates: climate, tectonic and humans drove landscape changes". The SEQS Board is glad to invite anyone interested in joining the meeting, highlighting that Project EQ 2444 provides the possibility for financial support for travel-accommodation and registration costs to the Meeting, primarily meant for PhD students, ECRs, and DCRs. Please email seqs2024@gmail.com for further information.

In a groundbreaking collaboration, the INQUA Paleopedology Working Group, IUSS Paleopedology Commission, and IUSS Young and ECR Working Group joined forces to embark on a captivating adventure—the creation of an educational illustrated short story titled *"The Mystery of Ancient Soils!"*, which has been funded by INQUA for 2023 and designated to SACCOM as the primary commission for the project. The story will center around the concept of soil memory, a fundamental pillar of contemporary paleopedology research, and shall be tailored for children and young readers. Initially, *The Mystery of*

Ancient Soils! will be available in eleven languages: Spanish, English, French, Polish, German, Russian, Portuguese, Hebrew, Arabic, and Turkish. The printed versions will be launched during the International Union of Soil Sciences Centennial Celebration in Florence in May 2024. Furthermore, the digital versions will be available on the Proyecto Suelox platforms from May 2024 onwards. The team leaders are Daisy Valera Fernández (National Autonomous University of Mexico), Axel Cerón González (Vrije Universiteit Brussel – KU Leuven), and Elizabeth Solleiro Rebolledo (National Autonomous University of Mexico).

This year, INQUA also funded a project on *"Geochronology and prehistoric archaeology of fluvial terraces"* led by Sam Kelly and Martin Moucheron (University College Dublin), and Simon Allerton (Cardiff University). They propose a workshop in Deeside in the Eastern Cairngorms, Scotland, in August 2024. This will include short talks by participants, keynote talks by senior scientists, methodological workshops, and field trips to Mesolithic terrace sites. Full details will be available soon on the SACCOM website.

SACCOM looks forward to providing more information about its and allied projects throughout the coming years. Please send any news you would like passed on to the President and Secretary of the Commission. To be subscribed to our mailing list, please [join SACCOM](#) (membership is free).

AFFILIATIONS

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Pete Langdon¹, Shanti Pappu², Thalamaharage Rathnasiri Premathilake³, Prabhin Sukumaran⁴, Becky Brice⁵, Prachi Joshi²

HABCOM Update December 2023

The newly appointed office bearers for the 2023-27 Inter-Congress period of the Humans and Biosphere Commission (HABCOM) have officially assumed their roles at INQUA Roma-2023. To ensure a seamless transition, hybrid online and offline interactions and meetings were organized between the incoming and outgoing board members. The new team conducted monthly meetings to develop and refine our plans for the inter-congress period. Additionally, we successfully promoted the INQUA grant call for 2024 to attract diverse proposals from around the world for funding consideration.

HABCOM is thrilled to announce the recipients of the winning proposals that focus on emerging areas of human biosphere research while maintaining geographical diversity. The awarded projects are as follows:

MAPPING ANCIENT AFRICA: CLIMATE, VEGETATION AND HUMANS - PHASE II (MAACH 2.0)

- **Recipient:** Stefanie Kaboth-Bahr
- **Affiliation:** Freie Universität Berlin, Germany
- **Summary:** The Mapping Ancient Africa (MAA) project embarked on a mission in 2021 to unite experts in palaeoclimate, climate modeling, palynology, and archaeology to decode climate patterns across Africa spanning the last 4 million years. This endeavour sought to address the significant uncertainties surrounding the nexus between climate change and the evolution, cultural development, and dispersion of hominins in Africa.

At its inception, MAA initiated network-building efforts, including regional hubs and a bimonthly online seminar series of 16 talks. These aimed to bridge gaps created by limited research funds, travel restrictions, and high conference costs, and resulted in greater participation of underrepresented researchers, especially from African nations, became more accessible. MAACH 2.0 will build on this progress, through greater networking and a series of publications.

PALAEOLITHIC HOMININS AND HABITATS: OUT OF AFRICA TO SOUTH ASIA (PALAEOHOME)

- **Recipient:** Kumar Akhilesh
- **Affiliation:** Sharma Centre for Heritage, Chennai, India
- **Summary:** PalaeoHome is an exciting project drawing together a global network of scientists working in India, Africa, Arabia, and SW and E Asia to address major issues related to multiple questions on the 'Out of Africa' story as related to chronology, palaeoenvironments and behavioural variability over the Lower Palaeolithic (Early to Middle Pleistocene), exploring similarities as also differences in evolutionary

trajectories. Through inclusive hybrid meetings (online and in-person: India, Ethiopia), we seek to network, share ideas, formulate publications, include and skill ECRs, build a database synergizing with INQUA groups with similar aims, and engage in public outreach with the wider community.

SETTLEMENT EFFECT ON PEAT OF KALIMANTAN (SEPOK)

- **Recipient:** Monika Ruwaimana
- **Affiliation:** Universitas Atma Jaya Ygyakarta, Indonesia
- **Summary:** SEPOK aims to better understand the impacts of urban development in peatlands. It will evaluate the scale and character of impacts of long-term urban settlement on peatlands by combining core depth, age and geochemistry measurement with remote sensing data. The team will compare peat data from heavily impacted and unimpacted areas, and based on this comparison, will infer the peat morphology and carbon storage of the pre-settlement landscape and evaluate the impact of urban development around the city of Pontianak, Indonesia. The Quaternary community

AFFILIATIONS

¹ University Of Southampton, UK

² Sharma Centre For Heritage Education, India

³ University Of Kelaniya, Sri Lanka

⁴ Charotar University Of Science And Technology, India

⁵ USGS, USA

eagerly anticipates the development of these projects over the coming year.

In recent HABCOC-funded projects, the "Teeth as Tools" initiative, led by Carlo Meloro from the University of Liverpool, UK, has progressed through two workshops and is now in its final stages. Stay tuned for the project's outcomes, which promise valuable insights into the relationship between human biology and cultural practices.

The "EPD Boost" project led by Walter Finsinger, Université de Montpellier, France, brought members from a diverse set of paleoecological communities together to foster combined analyses of continental datasets. The overall long-term goal of the project is to integrate the diverse set of European palaeoecological data into Neotoma and their joint analysis to better understand the whole ecosystem change on the European continent during the Quaternary.

The "pSESYNTH" project led by Xavi Benito, IRTA, Spain is focused on building a synthesis database of past human-environmental systems in the Global South. Several online meetings done by the team facilitated discussions on how varied datasets from different Global South regions can be effectively consolidated, while initially collating multivariate records mostly associated with aquatic and terrestrial environmental change. We await confirmation of their plan to organise an in-person workshop in early 2024.

The "LEM" project lead by Trina Bose from Birbal Sahni Institute of Paleosciences, India aims to map and model LULC indicators in different ecological regions of the monsoon to quantify modern analogues of climate variations. An associated aim is to integrate all published modern and palaeo biodiversity data into the South Asian Biodiversity Portal (SABDP) following the NEOTOMA palaeoecology database. LEM

held its first International School and Symposium (LEM-ISS) in March 2023 in tropical dry deciduous forests of western Vidarbha, Maharashtra, India. Twenty-three trainee participants from India, Nepal and Sri Lanka interacted with experts from India, Sri Lanka, France, Austria, the United Kingdom, and the United States of America.

The "Mapping Ancient Africa" project led by William Gosling, Amsterdam University, Netherlands, is a joint project with PALCOM, and will be supported going forward by MAACH 2.0 in the coming year. The project team was active at the INQUA Congress in Rome and via series of workshops and online seminars.

The HABCOC team is actively strategizing a series of initiatives for 2024 to expand the community of human biosphere researchers under the HABCOC umbrella and foster stronger connections between the scientific community and society. These initiatives include a podcast series to be broadcast through the website, social

media, and through personal emails with all members. Plans are underway to conduct a series of seminars in collaboration with other Commissions, promoting diverse perspectives in human biosphere research.

To streamline outreach activities, the team is currently working on organizing an open meeting for all HABCOC members in late January 2024. Recognizing time zone constraints, the meeting is scheduled to run twice, tentatively on January 25th for Asia/Pacific and January 26th for Africa/Europe/US time zones. Further details will be communicated to all HABCOC members via email.

We eagerly anticipate the participation of more young researchers from diverse geographic locations in HABCOC. If you are interested in joining, please visit our website at <https://inquaa.org/commissions/habcom/> join and follow us in social media @habcom_inqua. Your involvement will contribute to the dynamic and inclusive community we are building within the Humans and Biosphere Commission.

HABCOC

Humans and Biosphere Commission, INQUA

Officers and ECR representative 2023-2027



VICE PRESIDENT
Prof. Shanti Pappu



PRESIDENT
Prof. Peter Langdon



VICE PRESIDENT
Dr. Rathnasiri Premathilake



ECR
Dr. Prachi Joshi



SECRETARY
Dr. Prabhin Sukumaran



ECR
Dr. Rebecca (Becky) Brice

Manuel Chevalier¹, Ignacio Jara², Sudhira R Bhadra³, Syed Azharuddin⁴

PALCOM's objectives and engagements for the current inter-congress period

INQUA's activities encompass a large spectrum of Quaternary sciences and are divided among five commissions: Coastal and Marine processes (CMP), Human and Biosphere (HABCOM), Stratigraphy and Chronology (SACCOM), Terrestrial Processes, Deposits and History (TERPRO), and Paleoclimate (PALCOM). Erected in their modern structure at the 16th INQUA Congress in Reno, USA, in 2003, the commissions have since been the relay between INQUA's diverse community and the Executive Committee. Marked by the global COVID-19 pandemic, the last inter-congress period (2019-2023) has, unfortunately, been challenging for many commissions, as many planned activities have been delayed, postponed, or even cancelled. For this inter-congress period (2023-2027), the new PALCOM office is determined to revitalise its commission by promoting ongoing and several new activities and re-engaging with its members.

MEET THE NEW COMMISSION OFFICERS.

After its public election in June this year, the new team took office at the end of the INQUA Congress in Rome. Together, the PALCOM officers cover a broad range of expertise in palaeoclimate sciences:

- **Manuel Chevalier** (President; University of Bonn, Germany): Manuel's research focuses on reconstructing tropical climate variability from fossil pollen records using statistical techniques that model and exploit the natural uncertainties of climate proxies. He is interested in characterising the drivers of monsoon changes at the millennial to orbital timescale during the late Quaternary.
- **Antje Schwalb** (Vice-President): Antje works at the interface of geo- and biosciences. She and her team use remains from aquatic organisms from lake and estuarine sediments and geochemical proxies to monitor the response of the aquatic system and water quality to climate change and human impact. The most important research areas are the Tibetan Plateau, Central America, and Central Europe.
- **Ignacio Jara** (Secretary; Tarapacá University, Chile): Ignacio is a palaeoclimatologist focused on the Quaternary hydroclimate history of the South American Altiplano. His most recent research included the development of pollen-climate records from high-altitude lakes and the application of regional climate modelling techniques.
- **Syed Azharuddin** (ECR representative): In his research, Syed combines traditional and novel geochemical proxies to better understand the impact of climate variability on the Earth System. He analyses calcareous shells of foraminifera and their geochemical signatures to reconstruct the history of the Indian monsoon, oceanography, and air-sea interactions in the Northern Indian Ocean. He is also interested in the impacts of climate change on past greenhouse gas concentrations and air temperature variation using ice core and speleothem archives.
- **Sudhir Bhadra** (ECR representative): Sudhir's primary research focuses on the reconstruction of Indian monsoon-induced paleoceanographic changes in the Indian Ocean, utilising foraminiferal taxonomy, trace element, and stable isotope ratios in foraminifera shells.

Currently, he is working as a postdoctoral fellow at the Indian Institute of Science, where he analyses Boron isotopes in foraminifera that he combines with other proxies to comprehend glacial-interglacial variations in surface water properties of the Bay of Bengal.

CURRENT AND FUTURE ACTIVITIES OF THE COMMISSION

Right after the INQUA congress in Rome, the newly appointed commission officers (hereafter "we") focused their work on the upcoming round of INQUA grants, as we needed to provide information about the different types of funding opportunities and encourage a maximum of PALCOM members to participate. We collaborated closely with the applicants in building their proposals by offering feedback on project ideas and pre-proposals and helping with the application procedure. After this first wave of activity, we shifted gears and engaged in developing activities for the upcoming years. While INQUA projects are the bread and butter of every commission and many of PALCOM's activities will revolve around these, we aim not to limit our work to grant applications but to expand the range of activities organised by PALCOM. We have a few projects in mind that we would like to introduce to the community. We welcome feedback on these ideas and suggestions for other projects.

- The role of the commissions has always been to **support the community**. As such, we will organise an open annual PALCOM "grant" webinar in March-May 2024 to introduce the next INQUA project call. We will detail the different funding options available and provide

guidance on writing a successful INQUA project. The meeting will be followed by a discussion.

- The commission officers will again offer feedback on pre-proposals to **enable early-career and developing country researchers**, provided they are submitted early enough. Specific deadlines will be shared by email in due time.
- We also want to **increase the visibility of the supported projects** by creating a platform where the research can be presented and exchanged with the broader PALCOM community. In particular, we will disseminate information about project outputs, such as upcoming meetings, project-related publications, or short interviews of successful applicants, using the PALCOM mailing list and the regular issues of Quaternary Perspectives.
- We want **PALCOM to be more present in the day-to-day research landscape**. To achieve that goal, we propose to initiate a biannual thematic online mini-congress series in which researchers with different backgrounds and experiences will be invited to present and discuss their latest findings related to palaeoclimate science.
- In the long run, we also aim to organise the **first-ever in-person "PALCOM congress"** in 2026 to bridge the gap between the quadriennial INQUA congresses. If you are interested in hosting such an event, please contact us.

Ensure you receive every important update about these projects by joining PALCOM (see how to do this at the end of this article).

NEWLY-SUPPORTED PALCOM ACTIVITIES

Over the past months, we have already gone through the first wave of project proposal evaluations, and we are proud to report that four projects with diverse scopes and durations were funded out of the combined 13 proposals submitted under the PALCOM's umbrella (~30% success rate). This high number of submissions is a clear sign of the dynamism of the PALCOM community, and we encourage unsuccessful applicants to contact us and consider submitting a

revised proposal next year. The four projects selected for 2024 cover a broad range of palaeoclimate science (see below), most of which will be led by ECRs or DCRs.

- **Warm Intervals in the Southern Hemisphere (WiSH)**. Co-led by Jasper Knight (University of the Witwatersrand, South Africa), Jamie Schulmeister (University of Canterbury, New Zealand), Lydia Mackenzie (University of Tasmania, Australia), Kathryn Fitzsimmons (University of Tübingen, Germany), Elizabeth Rudolph (University of the Free State, South Africa), and Javiera Carraha (Pontificia Universidad Católica de Chile), this multi-year project aims to develop understanding the nature, properties and spatio-temporal patterns of warm intervals in the Southern Hemisphere during the Quaternary. A particular focus will be on the transitions to warm periods as analogues for anthropogenic warming.
- **Mapping Ancient Africa: Climate, vegetation and humans - phase 2 (MAACH 2.0)**. Co-led by Stefanie Kaboth-Barh (Freie Universität Berlin, Germany) and Rahab Kinyanjui (National Museum of Kenya), this multi-year project is a joint HABCOM-PALCOM activity that will leverage the international community developed during the first phase of the project to address multi-disciplinary palaeoclimate, climate modelling, palynology, and archaeology issues and decode climate patterns across Africa spanning the last 4 million years.
- **Defining a common PMIP-carbon protocol**. Co-led by Fanny Lhardy (École Normale Supérieure de Lyon, France), Nathaëlle Bouttes (Université Paris-Saclay, France), and Bo Liu (Max Planck Institute for Meteorology in Hamburg, Germany), this modelling-focused single-year project will devise a protocol to structure coupled

climate-carbon simulations during the last glacial cycle for the next Paleoclimate Modeling Intercomparison Project (PMIP) phase 5.

- **INTEgrating Ice core, Marine and TERrestrial records for advanced palaeoclimate reconstruction (INTIMATE)**. Co-led by Celia Martin Puertas (Royal Holloway University of London, UK), Simon Blockley (Royal Holloway University of London, UK), Rick Hanneckan (Royal Institute of Sea Research, Netherlands), and Eliza Cook (University of Copenhagen, Denmark), this multi-year project focuses on the synchronisation and comparison of high-resolution palaeoclimate and environmental records in the Northern Hemisphere based on their independent timescales. In the next four years, the INTIMATE network will apply this approach to investigate rapid climate changes in the Holocene epoch and beyond the circum-North Atlantic region, as well as it will foster impact through research in the palaeoclimate community.

THE NEXT STEPS FOR YOU

The next call for INQUA-funded projects will be open around June-July-August of 2024, with a usual submission date in August-September. If you have questions regarding a project you want to develop, contact us anytime at palcom@inqu.org or join our webinar next year (date TBA). Similarly, if you have thoughts or ideas regarding what you want your commission to do for you during congresses or in between, we want to hear them. Finally, if you are not a member of PALCOM, go to <https://inqu.org/commissions/palcom/join> and fill in the online form.

With your support, we look forward to seeing the commission and its community grow in the upcoming months and years.

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Andrea Zerboni¹, Petra Štěpančíková², Carlos H. Costa³, Christoph Grützner⁴,
Paula Marques Figueiredo⁵, Irene Puliti⁶

TERPRO new officers and activities

MEET THE NEW COMMISSION OFFICERS

The new TERPRO board includes specialists covering the broad interests of the community related to terrestrial processes and deposits. New officers are:

- **Andrea Zerboni** (President; University of Milano, Italy): Andrea is Professor of Geomorphology and Geoarchaeology at the University of Milano, Italy. His main interests are in Quaternary Geology, Geomorphology, and Geoarchaeology of circum-Mediterranean regions and arid lands of Africa and Asia. He is investigating how past climatic changes influenced surface processes and how the landscape and archaeological communities reacted to new environmental conditions. His approach starts with a detailed palaeoenvironmental reconstruction based on geomorphological and palaeohydrological indicators, and terrestrial archives, followed by the comparison with the archaeological

record. He is also the Editor in Chief of Quaternary Environments and Humans, the new INQUA journal.

- **Petra Štěpančíková** (Vice-President, Institute of Rock Structure and Mechanics of the Czech Academy of Sciences, Czech Republic): Petra is a researcher in neotectonics and tectonic geomorphology working at the Department of Neotectonics and Thermochronology at the IRSM. She studies long-term morphotectonic evolution of areas of interest and tectonic activity of selected faults. To assess the geodynamic evolution and tectonic activity she combines methods of tectonic geomorphology, structural geology, geomorphological mapping, paleoseismic trenching, shallow geophysics, and monitoring of current movements. After participating in paleoseismic surveys on various plate boundaries (e.g. in Spain, California, Mexico, Israel, India) she currently works on late Cenozoic tectonic structures and capable faults in intraplate regions of central

Europe, mainly in the Bohemian Massif.

- **Carlos H. Costa** (Vice-President, Universidad Nacional de San Luis, Argentina): Emeritus Professor at the Department of Geology, Universidad Nacional de San Luis, Argentina.
- Carlo's main expertise is in Andean neotectonics and seismic hazard. He was the coordinator for South America for several international projects as the ILP World Map of Active Faults, the Multi-Andean Project, and the South American Risk Assessment, and was the Principal Investigator of the Faulted Earth Project (Global Earthquake Model). He also acted as Mission Expert for IAEA-UN, FEMA-USA, CIDA-Canada.
- **Christoph Grützner** (Secretary; Friedrich-Schiller University Jena, Germany): He studies crustal deformation and past earthquakes using geophysical, geological, and remote sensing techniques with a focus on paleoseismology and tectonic geomorphology. His study areas comprised extensional settings like Germany, USA, Spain, and Greece, and areas of active shortening in Central Asia. He is also interested in tsunami studies and archaeogeophysics. Currently Christoph investigates active faulting in the Alps and in Guatemala.
- **Paula Marques Figueiredo** (ECR representative, North Carolina State University, USA): Paula is a geologist that researches Active Tectonics, Neotectonics, and Paleoseismology in distinct tectonic settings in the world. Her research focuses on the characterization of the deformation in sediments, rocks, and landforms. She conducts field surveys, frequently supported by remote sensing



*The new TERPRO Commission Officers (ECRs not present)
with past INQUA President Thijs van Kolfschoten*



Normal faulting in the Corinth Canal, Greece

analysis, and when possible, complemented with geophysical, geodetic, and geochronologic data. Paula runs the Geochronology Laboratories at NC State University.

- **Irene Puliti** (ECR representative, University of Chieti-Pescara, Italy): Irene is a post-doctoral researcher at Chieti-Pescara University. She is a geologist working on active tectonics and earthquake geology in extensional settings. Her research interests focus on detecting tectonic signals from landforms by morphotectonics and deformed sediments through paleoseismological investigations.

TERPRO ACTIVITIES

In the last intercongress period, several projects carried out their activities under the umbrella of TERPRO. Due to the pandemic, most of the meetings occurred online but this did not disrupt the dynamicity of the TERPRO community. The main IFGs and Projects were: the IFG 2008F [TPPT](#) (Terrestrial Processes Perturbed by Tectonics) dedicated to the study of long-term effects of tectonic events on geomorphic systems, and contrast them with effects of non-seismic forcing such as extreme meteorological events and slower climate change; the IFG 2010F [HYPEDA](#) (PalaeoHydrological, PEDological and AEolian processes shaping Quaternary landscapes) that focuses on continental environments, where the Quaternary

evolution has been mainly driven by depositional and erosive phases, varying in time and space, and alternating with less dynamic periods, allowing for soil formation; the IFG Project 2204 [LEMON](#) (Landscape Evolution Markers Online Network) that promotes the investigation of Low Strain Rate regions (LSRr), regions deforming at a rate less than 1

mm/yr, are the most widespread areas worldwide, thus representing perfect natural laboratories to analyse how the onshore and offshore landscape evolution (LE) relates to climate and tectonic forcings, both in active and not-active settings; the Project 2009P [EDITH](#) (From Earthquake Deformation to Seismic Hazard Assessment) that proposes to organize and facilitate annual meetings with a wide range of experts in earthquake geology, paleoseismology, geodesy and tectonic geomorphology to gain a better understanding of the earthquake cycle with the final aim to provide constraints to future new seismic hazard assessment (SHA) geologically-based models. Moreover, the TERPRO community also includes two working groups that are very active in organizing fieldtrips and meetings. Those are the [Peribaltic](#) Working Group, that is a scientific community of many countries located around influence of the Pleistocene Scandinavian Ice Sheet, and the [Paleopedology](#) Working Group that is interested in terrestrial soil-sedimentary sequences and surface polygenic soils and their role as terrestrial environmental archives.

NEWLY-SUPPORTED TERPRO PROJECTS

During the last weeks, INQUA ExComm completed the evaluation of proposals for new activities for the next intercongress period. Many highly valuable proposals have been proposed on topics related to TERPRO but only three of them could be supported.

- **Project 2446, CHAMP – Cascading Hazards and Mitigation Project**, a multiyear project lead by Tina Niemi (University of Missouri-Kansas City, USA) and focusing on the cascading effects of earthquakes which are an emerging research topic and intersect with research in extreme hydrometeorological events and climate change.
- **Project 2453, PHADMA – Palaeo-Hydrology: Ancient disasters, modern application**, a multiyear project lead by Willem Toonen (Vrije Universiteit Amsterdam, the Netherlands) and focusing on the intensification of the hydrological system (increase in extreme hydroclimatic events such as floods and droughts) because of rapidly warming climate.
- **Project 2454, PWGM2024 – Quaternary Sediments, Landscapes, and Early Settlement History in Western Estonia**, a stand-alone project lead by Alar Rosentau (University of Tartu, Estonia) and aimed at supporting the participation to the activities of then Peribaltic Working Group.

The next call for INQUA-funded projects will be open mid-2024 and we encourage the community to submit new proposals. If you have questions regarding a project you want to develop, contact the Commission: terpro@inqua.org. We also encourage you to invite your colleagues and especially the ECRs to join TERPRO, to increase the community during the next intercongress period.

AFFILIATIONS

¹ University of Milano, Italy

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³ Universidad Nacional de San Luis, Argentina

⁴ Friedrich-Schiller University Jena, Germany

⁵ North Carolina State University, USA

⁶ University of Chieti-Pescara, Italy

Alessandro Maria Michetti¹
IGC 2024 Advisory Board Member

The Great Travelers: Voyages to the Unifying Earth



Fig. 1: INQUA TERPRO 5th Pata Days 2014, 22 September, field work at site.1 – Quaternary marine terrace (Yonghan-ri site)

The [37th International Geological Congress \(IGC\)](#) will take place in Busan, Republic of Korea, 25-31 August 2024. Prof. Yeoung Seog Kim, the Secretary General of IGC2024, is a very active member of INQUA TERPRO, as you know. Indeed, Busan hosted a beautiful meeting in 2014 (INQUA TERPRO 5th Pata Days; Figs. 1 and 2).

Prof. Kim invited me to be part of the International Advisory Board, also with the aim of co-promoting INQUA and IGC. Indeed this is obviously a most relevant event for all INQUA Commissions, as well illustrated by the large number of offered sessions of interest for Quaternarists. Topical Session T2 is devoted to Quaternary Geology (6 sessions). Moreover, I just had a look at the [Scientific Program](#), and found the following (not intended to be complete, of course) list of INQUA relevant Topical Sessions: T1 Sedimentary Geology, 2 sessions; T4 Tectonophysics, 4 sessions; T7



Fig. 2: INQUA TERPRO 5th Pata Days 2014, 26 September, archaeoseismology in Gyeongju area, group photo at site.5 – Bulguksa Temple

About 40 field trips are planned in Korea and nearby regions, covering many areas of extreme interest for the INQUA community, from coastal environmental and sea level changes, to paleoearthquakes, Jeju Island active volcano, karst landscapes and underground drainage systems, UNESCO Global Geopark at Mudeungsan, South Korea nuclear sites, History and archaeology of Gyeongju, Geoarchaeology of SW Korea, Hapcheon Quaternary Impact Crater.

[Travel Grants](#), the GeoHost Support Program is designed to enable deserving geoscientists and geoscience students to participate in the International Geological Congress (IGC). We would be providing support to meritorious young/financially disadvantaged geoscientists and students to participate and present their researches at the 37th IGC in Busan.

Volcanology, 3 sessions; T10
 Geomorphology, 6 sessions; T15
 Paleoclimate and Paleoclimatology, 3 sessions; T16 Coastal, Marine and Lacustrine Geosciences, 7 sessions; T17
 Geoscience in Alpine and Polar Regions, 3 sessions; T18 Groundwater and Hydrogeology, 4 sessions; T21

Environmental Geosciences, 3 sessions; T23 Seismology, 3 sessions; T24
 Geophysics, 2 sessions; T31 Geohazards, 6 sessions; T38 Anthropocene, 3 sessions.

Deadline for abstract submission in February 16, 2024.

We are looking forward to making IGC2024 an outstanding event for the INQUA Community.

AFFILIATION

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IGC 2024
 The 37th International Geological Congress 2024

The 37th International Geological Congress
 25-31 August 2024 Busan, Korea

ABSTRACT SUBMISSIONS ARE NOW OPEN!

It is a great pleasure to announce that Abstract submissions for oral and poster presentations for IGC 2024 are now open. Hosted by IUGS and organized by the organizing committee of IGC 2024, the 37th International Geological Congress provides a wonderful opportunity for academic updates, business exchanges and global networking in geology and geoscience.

Don't miss chances to enjoy Korean culture.

www.igc2024korea.org

IMPORTANT DATES

- Abstract Submission ~ 16 Feb. 2024
- GeoExpo Registration – 31 May 2024
- Field Trip Registration 8 Jan. 2024 – 26 April 2024

Luigi Ferranti¹, Francesco Iezzi¹

Report of INQUA Summer School on Active faults and Volcano-Tectonics

AFFILIATIONS

¹ Università di Napoli "Federico II", Italy

The INQUA Summer School on Active faults and Volcano-Tectonics took place during September 25th -28th, 2023 in Naples, southern Italy. The meeting was attended by 18 PhD students and Early Career Researchers working on active tectonics and volcano-tectonics coming from 11 countries including Italy, Spain, Poland, Israel, Algeria, Mexico, Chile, Croatia, China, Indonesia, and New Zealand.

The first two days were spent at the Department of Earth Sciences, Environment and Resources (DiSTAR) and were devoted to scientific sessions that included presentations on earthquake geology, integrated approaches for investigating active faults, techniques of fault-based seismic hazard assessments, and volcano-tectonics analysis. The first day focused on active faults and included four keynote lectures by:

1. Gerald Roberts (Birkbeck, University of London): Dynamics of faulting and earthquake geology: insights from ³⁶Cl dating and stress modelling;
2. Klaus Reicherter (RWTH, Aachen University): New developments in paleoseismic methods, and their impact on Quaternary tectonic studies;
3. Pierfrancesco Burrato (Istituto Nazionale di Geofisica e Vulcanologia, Rome): Deciphering active tectonics from landscape evolution analysis: tools for earthquake geology;
4. Bruno Pace (Università "G. d'Annunzio", Chieti-Pescara): Fault-based seismic hazard assessments: a challenge to model complexities in seismic hazard. In the second day, focused on volcano-tectonics analysis, two lectures were given by
5. Paola Petrosino (DiSTAR; University of Naples): Volcanism of Italy and Campania region;
- 6) Stefano



Group photo during the field trip to the Irpinia fault.



Analysing the surface rupture of the Mw=6.9, 1980 earthquake

Vitale (DiSTAR; University of Naples): Meso- and macro-scale volcano-tectonic structures in the Campi Flegrei caldera (Southern Italy).

The second day also included a session of talks provided by the attendees, during which they presented their research activities.

The first day ended with a tour of the historical centre of Naples, which is the largest in Italy and one of the largest in Europe and testifies almost three millennia of history. The tour was led by professional guide Daniela Ibello and led the participants through the magical atmosphere of a city overflowing with historical and architectural suggestions, deservedly declared a world heritage site by UNESCO. In the second day, students and staff visited the Royal Mineralogical Museum, established in Italy in 1801 by King Ferdinand IV of Naples, the oldest in its kind in Italy. The tour was masterfully guided by the Director of the Science Museum Pole of Naples and mineralogy professor Piergiulio Cappelletti (DiSTAR).

The two last days included two field trips at the Irpinia active fault and in the Phlegrean Fields caldera. The Irpinia fault lies in the mid of the Apennines

belt and slipped during the destructive Mw=6.9, 1980 earthquake. The trip allowed participants to see and analyse, across the woody mountain ridge, the first ever witnessed and one of the most impressive co-seismic surface ruptures in Southern Italy.

The last day scheduled a trip to the Phlegrean Fields caldera, one of the most hazardous active volcanoes in the world because of its proximity to the city of Naples and home to nearly 700.000 people. The trip illustrated the volcano-tectonic evolution of the caldera along with its rich historical record. That is

because of the strategic position of this coast on ancient maritime routes, that encouraged an attractive settling place since the early Greek colonisation.

The workshop stimulated lively discussions in a friendly atmosphere that invariably continued during the pleasant nights in the historical centre of Naples. Overall, the talks and field trips revealed to be an inspiring experience for both attendees and teachers, which have been scientifically stimulated thanks to the active participation of everyone involved.



Attendees enjoy a panoramic view of the partly submerged Phlegrean Fields caldera from the hills of Naples

France - AFEQ-CNF

The AFEQ-CNF INQUA activities in the first half of 2024

THE 14TH INTERNATIONAL QUATERNARY CONFERENCE (Q14), RENNES, FRANCE, FEB 26-MARCH 1, 2024



Entitled “Q14: go west! The Quaternary in all its forms: Earth, Sea, Ice”, it will be organised by the Centre de Recherches en Archéologie, Archéosciences, Histoire (CReAAH, UMR 6566,) with the support of the AFEQ-CNF INQUA. The aims of the “Q14” symposium are to bring together the scientific communities working on the Quaternary and to present the latest research, discuss new methods of investigation and assert their links with contemporary societal issues.

The “Q14” symposium is structured around nine sessions and a round-table that will highlight the variety of themes and research topics pursued by French quaternary researchers:

- Session 1: From measured time to time lived by past

populations: crossing methods to refine chronological resolution.

- Session 2: Quantitative reconstruction of past terrestrial and aquatic environments. Linking observed and model data: data-model comparison.
- Session 3: The Quaternary of ancient massifs.
- Session 4: The island model: a laboratory for the interactions between pioneer societies and their environment.
- Session 5: Palaeobiodiversity and palaeobiogeography: evolution of continental Quaternary ecosystems.
- Session 6: Societies and Coastal and continental environments during the Quaternary.
- Session 7: Marine sediments: from depositional processes to paleoceanographic reconstructions.
- Session 8: The cryosphere: witness and actor in past climate and environmental changes.
- Session 9: Free session.
- Round-Table: From Quaternary Geology to Geoarchaeology, from project design to result dissemination: where are we now?

All information available on the congress website:

<https://q14.sciencesconf.org/resource/page/id/14>

FIELD TRIP: QUATERNARY OF THE SAVOIE REGION: A HISTORY OF GLACIERS AND MANKIND, MAY 27-29, 2024

The AFEQ CNF-INQUA will organize its yearly excursion from May 27-29, 2024 in the French Alps, entitled “Quaternary of the Savoie region: a history of glaciers and mankind”. The Quaternary of the *Pays de Savoie* is characterized by a major impact of glacial action and “late glacial” events such as glacio-lacustrine or fluvio-glacial deposits but also by major landslides. The *Pays de Savoie* offers a rich field laboratory for exploring:

1. the impact of “geological events”, particularly gravitational ones, on human activities,
2. the dynamics of lacustrine and glacio-lacustrine systems,
3. the evolution of relief and landscapes over time.

The itinerary covers a foreland-high valley transect, from

the frontal moraines of the LGM to those of the Younger Dryas recently dated using cosmogenic nuclides. The Maurienne valley allow to visit the preserved lake and glacier archives and also several gravity events will be in the spotlight.

The first day is dedicated to the foreland with observation of glacial landscape, famous view points on the area covered by glacier during LGM and on the Rhône valley and Lake Le Bourget.

The second day will focus on the Chambéry area. Consequences of major landscape on civil engineering infrastructure and landscape will be illustrated through several examples especially the Granier event that occurred in 1248 AD at the origin of a famous vineyard! Also a gravel quarry where lacustrine and fluvial deposits are well exposed will allows discussions on the glacial erosion and valley infill.

The third day is dedicated to a high alpine valley. The Neolithic occupation will be illustrated through rupestrian painting and engravings on polished rocks. Sedimentary archives will demonstrate the fluctuations of glaciers through Late glacial period.

For more information and registration please contact:



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Jule Xiao^{1,2} & Thijs van Kolfschoten^{3,4}

Quaternary International: New Releases



Cover page of the current issue of *Quaternary International* (Volumes 677–678)

In the first half of the year 2023 a total of 18 Volumes were published in *Quaternary International* including 10 Regular Issues and 4 Special Issues (4 Special Issues as double Volumes). For more information, please visit the [Quaternary International](https://www.quaternary-international.com) website.

REGULAR ISSUES

The 10 Regular Issues presented a total of 53 articles. Among these articles, 7 were devoted to Coastal & Marine Processes (CMP), 10 to Humans & Biosphere (HABCOM), 17 to Palaeoclimates (PALCOM), 2 to Stratigraphy & Chronology (SACCOM), and 17 to Terrestrial Processes, Deposits & History (TERPRO).

SPECIAL ISSUES

The 4 Special Issues presented a total of 42 articles and 4 Editorials. Among these 4 Special Issues, 3 are devoted to Humans & Biosphere (HABCOM), and 1 to Stratigraphy & Chronology (SACCOM). Below is a list of the 4 Special Issues.

[Volumes 662–663](#)

Zooarchaeology in the Interconnected Mediterranean: Livestock Production and Biometric Change between the Metal Ages and Late Antiquity
 Edited by Angela Trentacoste, Ariadna Nieto-Espinete, Silvia Valenzuela-Lamas
 Handled by QI Editor Patrick Roberts

[Volumes 665–666](#)**Two Million Years of Worked Osseous Technology: Proceedings of the 14th Meeting of the Worked Bone Research Group***Edited by Justin Bradfield*

Handled by QI Editor Patrick Roberts

[Volumes 674–675](#)**The Quaternary Mammalian Record from Central and Eastern Europe: New Data and New Insights: The Contribution of Palaeontology to the INQUA-SEQS 2021 Virtual Meeting: “Quaternary Stratigraphy – Palaeoenvironment and Humans in Europe” (13.12.2021, Wrocław, Poland)***Edited by Krzysztof Stefaniak, Urszula Ratajczak-Skrzatek, Thijs van Kolfschoten, Dariusz Nowakowski, Adrian Marciszak*

Handled by QI Editor Andrea Zerboni

[Volumes 677–678](#)**The Last Hunter-Gatherers on the Iberian Peninsula: An Integrative Evolutionary and Multiscalar Approach from Cueva de la Cocina (Western Mediterranean)***Edited by Oreto García-Puchol, Sarah B. McClure, Joaquim Juan-Cabanilles*

Handled by QI Editor Marian Berihuete Azorín

[Volume 624](#)**Technological Organization, Mobility, and Behavior at the Middle Paleolithic Site of Neshar Ramla**

Including 13 articles with the Editorial

Edited by Yossi Zaidner, Reuven Yeshurun

Handled by Quaternary International Editor Qingzhen Hao

[MOST CITED TOP 10](#)

Below is a list of the most cited top 10 articles published since January 2020. Among these 10 articles, 3 are devoted to Humans & Biosphere (HABCOM), 1 to Palaeoclimates (PALCOM), and 6 to Terrestrial Processes, Deposits & History (TERPRO). In addition, all the 10 articles are from Special Issues.

1. Gohain, K.J., Mohammad, P., Goswami, A., 2021. **Assessing the impact of land use land cover changes on land surface temperature over Pune city, India.** *Quat. Int.* 575–576, 259–269. [Cited by 83]
2. Alam, A., Ahmed, B., Sammonds, P., 2021. **Flash flood susceptibility assessment using the parameters of drainage basin morphometry in SE Bangladesh.** *Quat. Int.* 575–576, 295–307. [Cited by 61]
3. Kumar, V., Shukla, T., Mehta, M., Dobhal, D.P., Bisht, M.P.S., Nautiyal, S., 2021. **Glacier changes and associated climate drivers for the last three decades, Nanda Devi region, Central Himalaya, India.** *Quat. Int.* 575–576, 213–226. [Cited by 49]
4. Badino, F., Pini, R., Ravazzi, C., Margaritora, D., Arrighi,

S., Bortolini, E., Figus, C., Giaccio, B., Lugli, F., Marciani, G., Monegato, G., Moroni, A., Negrino, F., Oxilia, G., Peresani, M., Romandini, M., Ronchitelli, A., Spinapolice, E., Zerboni, A., Benazzi, S., 2020. **An overview of Alpine and Mediterranean palaeogeography, terrestrial ecosystems and climate history during MIS 3 with focus on the Middle to Upper Palaeolithic transition.** *Quat. Int.* 551, 7–28. [Cited by 43]

5. Taloor, A.K., Joshi, L.M., Kotlia, B.S., Alam, A., Kothiyari, G.C., Kandregula, R.S., Singh, A.K., Dumka, R.K., 2021. **Tectonic imprints of landscape evolution in the Bhilangana and Mandakini basin, Garhwal Himalaya, India: A geospatial approach.** *Quat. Int.* 575–576, 21–36. [Cited by 40]
6. Sood, V., Gusain, H.S., Gupta, S., Taloor, A.K., Singh, S., 2021. **Detection of snow/ice cover changes using subpixel-based change detection approach over Chhota-Shigri glacier, Western Himalaya, India.** *Quat. Int.* 575–576, 204–212. [Cited by 38]
7. Guha, S., Govil, H., Gill, N., Dey, A., 2021. **A long-term seasonal analysis on the relationship between LST and NDBI using Landsat data.** *Quat. Int.* 575–576, 249–258. [Cited by 37]
8. Kabukcu, C., Chabal, L., 2021. **Sampling and quantitative analysis methods in anthracology from archaeological contexts: Achievements and prospects.** *Quat. Int.* 593, 6–18. [Cited by 35]
9. Lakhote, A., Thakkar, M.G., Kandregula, R.S., Jani, C., Kothiyari, G.C., Chauhan, G., Bhandari, S., 2021. **Estimation of active surface deformation in the eastern Kachchh region, western India: Application of multi-sensor DInSAR technique.** *Quat. Int.* 575–576, 130–140. [Cited by 34]
10. Jørgensen, E.K., 2020. **The palaeodemographic and environmental dynamics of prehistoric Arctic Norway: An overview of human-climate covariation.** *Quat. Int.* 549, 36–51. [Cited by 33]

For more information, please visit the [Quaternary International](#) website.

[MOST DOWNLOADED TOP 10](#)

Below is a list of the most downloaded top 10 articles in the last 90 days. Among these 10 articles, 7 are devoted to Humans & Biosphere (HABCOM), 1 to Stratigraphy & Chronology (SACCOM), and 2 to Terrestrial Processes, Deposits & History (TERPRO). In addition, 1 is regular article, and 9 are from Special Issues.

1. Carvalho, A.F., Fernández-Domínguez, E., Arroyo-Pardo, E., Robinson, C., Cardoso, J.L., Zilhão, J., Gomes, M.V., 2023. **Hunter-gatherer genetic persistence at the onset of megalithism in western Iberia: New mitochondrial evidence from Mesolithic and Neolithic necropolises in central-southern Portugal.** *Quat. Int.*, 677–678, 111–120.
2. Silva, P.G., Elez, J., Pérez-López, R., Giner-Robles, J.L.,

- Gómez-Diego, P.V., Roquero, E., Rodríguez-Pascua, M.Á., Bardají, T., 2023. **The AD 1755 Lisbon Earthquake-Tsunami: Seismic source modelling from the analysis of ESI-07 environmental data.** *Quat. Int.* 651, 6–24.
3. Wertmann, P., Xu, D., Elkina, I., Vogel, R., Yibulayinmu, M., Tarasov, P.E., La Rocca, D.J., Wagner, M., 2022. **No borders for innovations: A ca. 2700-year-old Assyrian-style leather scale armour in Northwest China.** *Quat. Int.* 623, 110–126.
 4. Zalasiewicz, J., Waters, C.N., Williams, M., Barnosky, A.D., Cearreta, A., Crutzen, P., Ellis, E., Ellis, M.A., Fairchild, I.J., Grinevald, J., Haff, P.K., Hajdas, I., Leinfelder, R., McNeill, J., Odada, E.O., Poirier, C., Richter, D., Steffen, W., Summerhayes, C., Syvitski, J.P.M., Vidas, D., Wagreich, M., Wing, S.L., Wolfe, A.P., An, Z., Oreskes, N., 2015. **When did the Anthropocene begin? A mid-twentieth century boundary level is stratigraphically optimal.** *Quat. Int.* 383, 196–203.
 5. Benjamin, J., Rovere, A., Fontana, A., Furlani, S., Vacchi, M., Inglis, R.H., Galili, E., Antonioli, F., Sivan, D., Miko, S., Mourtzas, N., Felja, I., Meredith-Williams, M., Goodman-Tchernov, B., Kolaiti, E., Anzidei, M., Gehrels, R., 2017. **Late Quaternary sea-level changes and early human societies in the central and eastern Mediterranean Basin: An interdisciplinary review.** *Quat. Int.* 449, 29–57.
 6. Mann, A.E., Yates, J.A.F., Fagernäs, Z., Austin, R.M., Nelson, E.A., Hofman, C.A., 2023. **Do I have something in my teeth? The trouble with genetic analyses of diet from archaeological dental calculus.** *Quat. Int.* 653, 33–46.
 7. Radini, A., Nikita, E., 2023. **Beyond dirty teeth: Integrating dental calculus studies with osteoarchaeological parameters.** *Quat. Int.* 653, 3–18.
 8. McCalpin, J., Ferrario, F., Figueiredo, P., Livio, F., Grützner, C., Pisarska-Jamroży, M., Quigley, M., Reicherter, K., Rockwell, T., Štěpančíková, P., Tábořík, P., 2023. **New developments in onshore paleoseismic methods, and their impact on Quaternary tectonic studies.** *Quat. Int.* 664, 59–76.
 9. Veth, P., Myers, C., Heaney, P., Ouzman, S., 2018. **Plants before farming: The deep history of plant-use and representation in the rock art of Australia's Kimberley region.** *Quat. Int.* 489, 26–45.
 10. Lister, A.M., Stuart, A.J., 2019. **The extinction of the giant deer *Megaloceros giganteus* (Blumenbach): New radiocarbon evidence.** *Quat. Int.* 500, 185–203.

For more information, please visit the [Quaternary International](https://www.quaternary-international.com) website.

REMARKS

Quaternary International, the official journal of the International Union for Quaternary Research (INQUA), publishes peer-reviewed high-quality research articles that reflect recent advances in all the disciplines of Quaternary science and that appeal to the wide audience of the global Quaternary community. In addition to regular

submissions, special issues that are organized by leading scientists for addressing major scientific questions in contemporary Quaternary research are welcomed.

We would like to take this opportunity to invite Quaternary scientists to propose special issues for publication in *Quaternary International*. For further details, please feel free to contact the Editor-in-Chief ([Jule Xiao](mailto:jlxiao@mail.iggcas.ac.cn)).

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