



The INQUA
Newsletter



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Cover photo: A view of the eastern Andean landscape in Argentina, taken during the PATADays 2024 in the postmeeting fieldtrip across the Andes to Mendoza region.
Credits: PATADays Chile, October 6-11, 2024.

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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 world-wide. 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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New year, new website

We, the Executive Committee of INQUA, are thrilled to announce that the [INQUA website](#) has been completely renewed, offering a fresh, modern design and enhanced functionalities to better serve our community.

This achievement was made possible thanks to the initiative and dedication of our past President Thijs van Kolfschoten, whose vision has brought our digital platform to a new level, and thanks to the advice of the President Laura Sadori, the Vice President Kathleen Nicoll, and the Treasurer Freek Buschers.

The new website was expertly developed by the Dutch Company Eagerly, and its content has been and will continue to be updated by Aritina Haliuc, who is doing an outstanding and demanding job. You will probably notice that the INQUA logo is still missing, we plan to develop it in the near future.

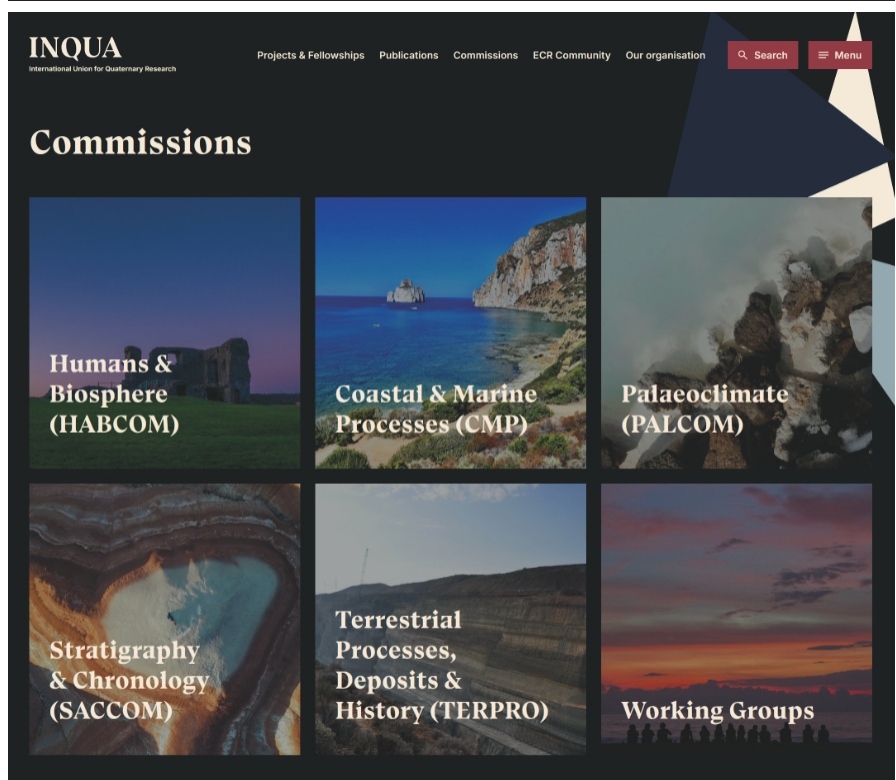
We encourage you all to explore the website, where you'll find updated resources, event announcements, and opportunities to engage with the global Quaternary science community.

As we welcome the new year, we extend our warmest wishes to each of you for a joyful and fulfilling 2025. May the new year bring success to our research endeavors and strengthen the bonds within our vibrant INQUA community.

Thank you for your continued commitment to INQUA. Together, let's make 2025 a year of collaboration, discovery, and innovation!

Laura Sadori

For the Executive Committee



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Bridging the Gap: Fostering Collaboration Between Proxy and Model-Based Hydroclimate Research at TROPQUA 2024

The 3rd INQUA- PAGES workshop for early-career researchers (ECRs) was held at the CSIR- National Institute of Oceanography (NIO), Goa, India between 3-7 November. The theme for this workshop was "Tropical hydroclimate variability in the Quaternary: Insights from proxies and models, and the way forward (TROPQUA).

The Quaternary period, encompassing the past 2.6 million years, represents an important period in the Earth's history that is characterised by abrupt climate and environmental changes, the extinction of large megafauna and the evolution and dispersal of hominins across the globe. Our collective knowledge of how, when and under what climatic conditions these events occurred is based on our inference of past climate using different proxies and aided by an exponential growth in numerical models. Paleoclimate studies not only help to reconstruct or simulate past climate

scenarios but also improve our prediction of future climatic changes and are therefore essential towards understanding extreme climate scenarios and sustaining a habitable earth. However, integration and comparison of proxy data with models in Quaternary climate studies is not a common practice at the moment and more often than not, conducted by isolated research groups. Interdisciplinary collaborations between geologists, climatologists, oceanographers, ecologists, modelers and archaeologists, will not only enrich our understanding of the Quaternary environment but will also help us redirect our future efforts towards adopting a more open and cohesive approach to climate studies. Therefore, there is a need to let researchers working on these topics come together and discuss their results and research methods, and maximise their efforts by enlarging their scientific network.

This workshop aimed at bringing together early career researchers investigating climate dynamics over various timescales in the Quaternary based on proxy data and climate models, with the common goal of bridging the gap between these two components of research and fostering collaboration. The purpose of this workshop was to provide a platform for climate modelers and proxy data-driven climate scientists to (i) Interact and engage with each other to better understand the nuances, advantages and limitations, and capabilities that underpin their respective methods (ii) Identify challenges and discuss solutions for integrating and comparing different proxy data and models and (iii) Widen

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Figure 1: Participants of TROPQUA 2024 at CSIR-NIO, Goa. Ph.: Deepak RP

their network and collaborate with the aim of enhancing our understanding of Quaternary climate dynamics.

The workshop was organised in hybrid mode which included 27 in-person and 7 online presentations by ECRs. A total of 38 attendees from 10 countries gathered at the CSIR-NIO, Goa to make TROPQUA a grand success. TROPQUA included five keynote talks, a public talk, oral and poster sessions, flash talks, a field trip, a Science communication workshop, a group discussion on scientific publishing, laboratory visits at the host Institute (CSIR-NIO, Goa), Outreach events (organised as 'Climate evening on the Beach') and breakout group activities.

The workshop started with a field trip to Sinquerim beach and Dona Paula. The Goan coastline has recorded the changes of relative sea level for thousands of years, the evidence of which is preserved in the numerous coastal geomorphic features like rock-cut platforms and tidal notches. At the Sinquerim beach, the participants looked at a shore platform-seacliff junction, which is an indicator of past tidal ranges, and an older marine sandstone layer with shells. Then, the participants visited a shore platform and a number of tidal notches at various heights, near the Dona Paula jetty, a stone's throw away from NIO. A discussion was also held on how to connect these paleo sea level observations to sea level simulations and paleoclimatic reconstructions.

The TROPQUA workshop had a series of engaging keynote talks that highlighted cutting-edge research in tropical hydroclimate studies. Dr. Georgy Falster presented insights into forced and intrinsic variability in the Pacific Walker Circulation over the past 800 years, while Dr. Sze Ling Ho discussed inter-proxy and proxy-model discrepancies in ocean temperature reconstructions. Dr. Yama Dixit explored the hydroclimate impacts of the abrupt North Atlantic cooling event 8.2 thousand years ago, particularly in South Asia. Dr. Peter Hopcroft examined land-atmosphere interactions during the Holocene desertification of the Sahara, providing a unique perspective on Earth system dynamics. Lastly, Dr. Feng He shared findings from data-

model comparisons of transient climate simulations of the Last Deglaciation, highlighting the need for more data-model comparison studies to solve the outstanding questions in the Quaternary. Together, these talks exemplified the interdisciplinary and collaborative spirit of the workshop, advancing our understanding of past climate variability and its implications.

Dr Rajiv Nigam, Rtd. Chief Scientist CSIR-NIO gave the public lecture on 'Marine Archaeology: exploring past to illuminate future'. While the academic, cultural heritage and economics of marine archaeology were highlighted, he also informed the audience on how paleoclimate and marine archaeology share a common aim of understanding the past. The main thrust of his talk was on understanding the past sea level changes and its implications on ancient Indian civilizations. Amongst many, noteworthy illustrations were given from his work on Dholavira, a city in Harappan civilisation (~3300- 1300 BCE), where the extremely thick walls were linked to protective measures from tsunami waves/ storms. Dholavira is a recognised UNESCO cultural world heritage site today.

Presentations were organised into six thematic sessions. The sessions were designed considering the study area, proxy and time period that the individual studies covered. The session "Development in proxies for Quaternary research in Tropical hydroclimate" dealt with the advancement in Quaternary proxies like Clumped isotope and biomarker based paleothermometry, carbonate sediment dynamics, benthic foraminifera and magnetofossils. The session "Past Global changes in the last 2000 years" was dedicated to the PAGES 2k group which discussed the effect of hydroclimate variability of the past 2 kyr on the tropical vegetation, droughts and agricultural system. The paleoceanography focused session had multiple talks on changes in carbon burial, productivity, deep water circulation and ventilation during the Quaternary. The rest three sessions were based on the regional hydroclimate variability in Asia,

Africa and America and included talks from these regions. The talks covered a varied range of proxies and models used in different timescales and regions, which gave enough ideas to all the participants in different fields and set the base for further discussion through 'Breakout' group activities and future collaboration. The poster presenters were also given 3 minutes to present a brief outline of their research and invite others to visit their poster.

The workshop also included a breakout group activity, in which participants split into five groups to discuss and present individual research articles that combined proxy with modeling methodologies. This group activity was designed not only to review some of the current state-of-the-art techniques but also to highlight the importance of fostering interdisciplinary collaborations for advancing paleoclimate knowledge. By working together, participants of the workshop gained a deeper understanding of the use of proxy and modeling approaches to better understand the drivers and mechanisms of past climate histories.

The breakout group activity consisted of an introduction and three working sessions. Initially, Dr. Ignacio A. Jara (University of Tarapacá) made a short online presentation to briefly introduce the activity's goals and working schedule. During the first group session, participants introduced themselves to their respective groups, and the groups reviewed the assigned scientific article, outlining the specific techniques employed in the research article to combine proxy, instrumental, and modeling datasets. In the second group session, the participants worked on their presentations and had the space to explore a little bit further how their individual backgrounds and specialties could be applied in future collaborative initiatives. During the final session, each group presented their discussion on the article assigned to them and discussed the strengths and limitations of the methodologies employed in the article. Each group also came up with innovative ideas for future

collaborations, which were discussed by the participants of the other groups as well.

In addition to the activities listed above, TROPQUA 2024 also included several other activities. The participants visited the micropaleontology, seaweed culture, XRF and ICP-MS laboratories of the CSIR-NIO and got an insight into the ongoing projects being carried out using different facilities. There was a science communication workshop organised for the participants, where Dr Sambuddha Mishra from the Indian Institute of Science gave a detailed overview of the nitty-gritty aspects of scientific presentation and how to communicate science more effectively. The event also involved fun activities through which the participants tested their ability to explain their research concisely. During the event "Climate Evening on the Beach" the participants got a chance to learn different methods of sample collection from the beach. They, along with the local organizing committee also got a chance to communicate and showcase their research to the general public at the Miramar beach. The committee members and participants also engaged with the public on various topics related to climate change and the work INQUA and PAGES are conducting on the paleoclimate front. On the last day of TROPQUA 2024, there was a group discussion on the "Future of scientific publishing". Dr Jamie Males from the Journal PLOS Climate gave a talk on the current scientific publishing landscape which was followed by a question-answer session and group discussion.

Thus, TROPQUA 2024 provided a platform for the ECRs working in Quaternary science to come together, engage, network and build collaborations. As organisers of this workshop, we believe TROPQUA 2024 was successful in providing this space and platform, which we hope will result in future collaborative projects between ECRs working with different proxies and models in Quaternary hydroclimate research.



Figure 2: Field visit to Dona Paula. Ph: Marie-France Loutre

Manuel Suazo^{1,2} and Sociedad Chilena de Ciencias del Cuaternario (SOCHICUA)

First national symposium of the Chilean Quaternary Association (SOCHICUA)



Figure 1: Dr. Carolina Villagrán and Dr. Lautaro Núñez, pioneering of Quaternary research in Chile and invited keynote speakers of the symposium

The theme "From Ice to Desert: Investigations of the Quaternary Period" brought together the First Symposium of the Chilean Society of Quaternary Sciences (SOCHICUA). The event marked a foundational milestone for Quaternary research in Chile, held from August 28 to 30, 2024, in La Serena at the Gabriela Mistral Regional Library. This symposium convened a scientific community from multiple disciplines, covering geological, paleoclimatic, and archaeological aspects of Quaternary studies. It served as a key opportunity to present recent research advancements, strengthen collaboration networks nationally and internationally, and promote the integration of young scientists in this field. This provided a fundamental platform

for the exchange of knowledge about the environmental history of the region.

Over the first two days, 32 oral presentations and 21 posters were presented, organized into five thematic sessions: (1) Geoarchaeology and Environmental Archaeology in Recent Quaternary Studies across Chile, (2) Inorganic Geochemistry of Sediments: From Quaternary Environmental Variability to Anthropogenic Impact, (3) Paleoclimatic and Paleoecological Changes during the Last Glacial Termination, (4) The Last Glacial Maximum in Chile, and a session dedicated to open themes.

The symposium began on the 28th morning, with the opening welcome by the organizing committee, followed by a series of talks focused on Geoarchaeology and Environmental Archaeology of the recent Quaternary. The topics ranged from isotopic evidence of camelids in the Atacama

Desert to geostratigraphy in the semi-arid northern basins of Chile. Discussions revolved around how environmental and climatic changes have influenced human settlement patterns and ecological stability over time.

Following a coffee break that provided an opportunity for informal discussion about the initial talks, the first of two keynote addresses took place. The address was given by Dr. Lautaro Núñez, archaeologist and recipient of the National History Prize in 2002, a pivotal figure in the study of human settlements in Chile. His presentation, titled "From My First Contributions at the End of the Quaternary: Excavations at Tagua Tagua," highlighted significant details of his research at the iconic archaeological site. At the end of the lecture, he



Figure 2: The field trip was dedicated to explore the Quaternary history of the coastal region in northern Chile

was honored as an honorary member of SOCHICUA in recognition of his outstanding contributions both as a researcher and mentor in Chilean archaeology and history.

After lunch, the first session of open topics centered on northern Chilean research. The session included studies on the ecological history of the Salar de Llamara, analyses of paleoclimatic changes in the Atacama Desert, and plant adaptations to extreme arid conditions. After another coffee break, the session on "Inorganic Geochemistry of Sediments" resumed, covering studies from the Pleistocene era to recent anthropogenic impacts. Presentations addressed a variety of topics, including changes in Chile's aquatic and terrestrial ecosystems, with a particular focus on how these environments have responded to climatic and geological changes over time.

The day ended with a poster session where participants presented a range of research related to Chile's environmental and archaeological history. The presentations offered a broad overview of current research, including computational reconstructions of past climatic variability, human impacts on ancient ecosystems, and advanced sediment study methodologies. This session created a dynamic space for discussion and exchange of ideas about the latest advancements and discoveries in these fields.

On the second day, a block of talks focused on glaciological topics related to two critical periods of the Quaternary: the Last Glacial Termination and the Last Glacial Maximum. Presentations explored a range of aspects, including glacial dynamics from a paleoclimatic perspective, plant diversity during these periods, climatic drivers behind these changes, and variations in precipitation and wind patterns. Two additional studies on paleoglaciology provided detailed insights into glacial dynamics in the Subtropical Andes and a paleoenvironmental reconstruction using diatoms.

The second keynote lecture was delivered by Dr. Carolina Villagrán, a renowned paleoecologist, botanist and philosopher from the University of Chile. Her retrospective,

titled "A Brief Review of Significant Contributions to the Historical Development of Quaternary Knowledge in Chile during the 19th and 20th Centuries", traced the evolution of modern Quaternary environmental studies in Chile, starting with biogeographical observations by historical naturalists such as Darwin, Philippi, and Humboldt, as well as national figures like Vicuña-Mackenna. She advanced through contemporary studies and indirectly highlighted her pivotal role in establishing modern environmental studies at the University of Chile, mentoring many of today's leading national academics in this field. Her talk not only underscored the historical foundations of the discipline but also connected this legacy with the symposium attendees, demonstrating how the past continues to shape current science. At the end of her presentation, Dr. Villagrán was honored as an honorary member of SOCHICUA for her remarkable contributions to Quaternary studies in Chile.

The final block of talks centered on southern Chilean research, covering a broad range of topics from paleoenvironmental studies in the Andes to anthropogenic impacts on marine biodiversity. Researchers presented findings on historical fire dynamics, climatic changes and their influence on regional vegetation and geography, as well as species conservation efforts.

To close the activities at the Gabriela Mistral Regional Library, a General Assembly of SOCHICUA members was held on Thursday afternoon. This critical meeting discussed the organization's future and strategies for upcoming years. Key points included the establishment of a new board, payment modalities, strengthening and forming partnerships with

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international Quaternary science organizations. An important decision was the adoption of a biennial meeting format, with the next event scheduled for 2026 in the southern cities of Valdivia or Concepción

The final activity in La Serena was a closing dinner at “Pueblito Peñuelas”, offering an intimate and relaxed setting for attendees. This gathering provided an excellent opportunity for researchers at different career stages to exchange ideas more informally, fostering closer bonds and collaborations. The dinner featured a selection of Italian cuisine, providing a well-deserved break for participants after intense scientific discussions and reflection. It was also an ideal opportunity to share experiences and continue deepening conversations sparked during the event.

The symposium concluded on Friday, August 30, with a field trip to explore the coast of the Coquimbo Region, visiting sites such as Puerto Aldea, the Pachingo Wetland, and Punta Teatinos. Participants observed and analyzed diverse geological formations, including the stepped marine terraces of Punta Teatinos, which reflect the effects of the Last Glacial Maximum and regional tectonic uplifts. At the Pachingo Wetland, attendees examined sediment deposits from extreme events like the tsunamis of 1922 and 2015, underscoring the importance of these records for understanding paleoceanography and coastal risk management.

The field trip concluded with a camaraderie lunch at Caleta San Pedro, offering attendees a chance to reflect and exchange ideas on their observations and learnings. This closing activity perfectly encapsulated the event's spirit, blending essential academic discussion with the opportunity to connect more closely with colleagues, through direct interaction with landscapes illustrating the studied

phenomena, reinforcing the importance of integrating theory with field experience for a deeper understanding of Quaternary geological and climatic changes.

The symposium was widely deemed a success by its organizers and participants, not only due to the scientific quality of the presented work but also because of the interactions among attendees. It consolidated SOCHICUA's fundamental role as a reference for Quaternary research in Chile, providing a valuable platform for peer-to-peer scientific exchange, collaboration, and debate. Furthermore, it gave early-career researchers the opportunity to connect formally and informally with more experienced colleagues, building essential networks for the future development of Quaternary research in the country.

The diversity of topics covered, from climatic changes to archaeological studies, reflected the multidisciplinary nature of Quaternary research in Chile. This comprehensive approach enriched knowledge exchange and offered a special opportunity to honor two prominent pioneering Quaternary scientists, Lautaro Nuñez and Carolina Villagrán, who shared their contributions to modern studies of Chile's environmental and human history through their plenary lectures. This symposium laid the groundwork for building a long-term network dedicated to organizing and disseminating knowledge about the Quaternary period in Chile, promoting collaboration among researchers, institutions, and disciplines. The common motivation to advance the understanding of processes shaping our environment and using this knowledge to tackle near-future environmental challenges marked the symposium's collective and organized approach to studying the environmental and human history of Chile during a period of unprecedented change.



Figure 3: The symposium was widely deemed a success by its organizers and participants, with a total of 32 oral presentations and 21 posters being presented.

Henry Hooghiemstra¹, Adam Lebeda²

The Missing Link; the challenge of making a congress programme

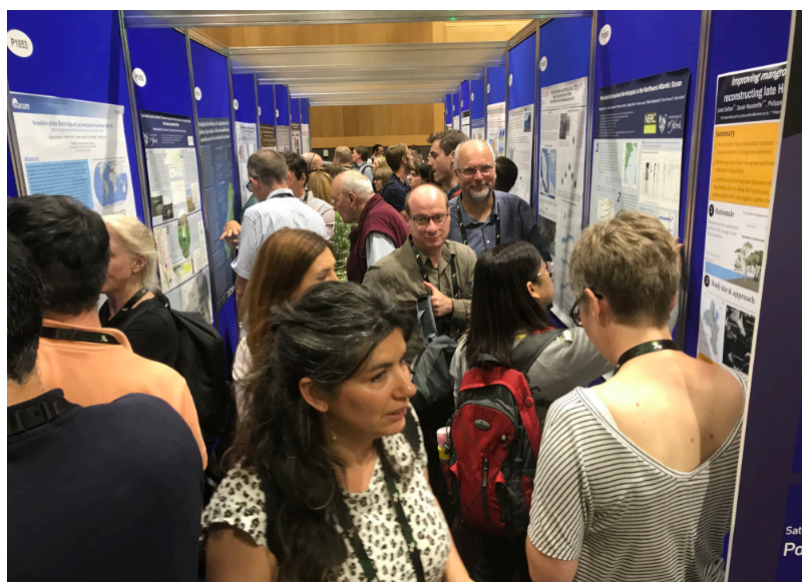
The quality of the contents of congress programmes is declining. As an emeritus I have participated in some 15 congresses with parallel sessions since 1982, mainly ICP and INQUA congresses. Up to a decade ago participants received a 'Programme' showing sessions, talks, and a list of congress participants, together with a 'Book of Abstracts'. This tradition seems broken. Navigating through parallel sessions and listening to a maximum of talks of personal interest is not possible any more with the information provided. While congress presentations have reached high-tech levels in the digital era, the ability to provide participants with the adequate information at the right time has declined.

In a multi-session congress it is crucial to have tables showing all parallel sessions with room name as columns along the timeline for each day. All columns should mention first author, (short) title and time interval. When many parallel sessions occur two opposite pages are needed for such an overview. So, for a large four-day congress this would consume eight pages only. The use of colour may mark the main themes of the sessions. After having received this

information at the registration desk an exciting job for the first evening awaits. All talks of interest can be highlighted; use a different colour for talks of minor and highest personal relevance. Hopefully, there are not too many talks overlapping in time. Such overviews will navigate you through the sessions. It is clear that speakers and chairpersons should stick to the time schedule. The distance between the different rooms should be taken considered if a switch of

rooms is feasible. It also becomes clear which part of the day can be used for networking. A printed Book of Abstracts is a perfect place to make notes about unknown literature and all kind of hints that can be used for the master-, PhD- and postdoc projects ongoing in your research group. During the months after the congress these notes can be discussed and perhaps implemented. Potential speakers may be identified to contribute to your institute's series of invited lectures. In this way a printed book of abstracts is a valuable source of information after the congress.

Here, we reach a delicate point in this paper. We should be restricted in our critics as our colleagues have spent much of their precious time to organize a congress. However, it seems problems arose during recent years because the development of congress programmes have



become outsourced to commercial parties. Outsourcing is not necessarily problematical if a congress participant receives the information needed to navigate through a multi-session congress in time. At the XV International Palynological Congress (27-30 May 2024) the map with rooms and an overview of sessions was provided. However, the connection with the authors and talks was missing on paper, preventing participants from making their personal navigation route through the parallel sessions. Near the entrance of the rooms a monitor showed the authors and titles of talks in the particular room, but an overview for the full day was sorely missed: the missing link. As some participants do not need a book of abstracts, the new practice of ordering a printed Book of Abstracts at additional costs at the moment of registration, is an excellent idea to prevent wasting paper.

Discussions always need the opinions of opposite parties. Therefore, I invited ICT manager Adam Lebeda from the C-IN (Congress Organizers, Prague) on current practice of congress programs.

Adam Lebeda: Providing delegates with information regarding the conference content, latest schedule updates, and programme locations is crucial for the success of the event. When creating a printed programme, it is important to consider various deadlines. For physical production, allocating approximately 7 days, an extra day for transportation, and factoring in the graphic designer's workload is necessary. These timelines may vary based on the quantity of materials needed and the complexity of the content. As our schedules grow busier, we tend to plan in shorter, more frequent intervals, leading to more frequent changes. This results in situations where the printed programme is often finalized and printed, only to become outdated even before it arrives from printing house. It is essential to understand that the conference is a dynamic entity, and changes can occur throughout its preparation, particularly concerning room assignments and speaker participation. While the overall outline of the conference programme may evolve, its fundamental structure likely remains unchanged. Abstracts have already been submitted and endorsed by the Scientific Committee, and pages containing up-to-date information remain unaltered. Nevertheless, modifications primarily occur within the detailed programme, including session schedule adjustments, speaker substitutions, presenter order changes, room re-assignments, and rescheduled or relocated sessions.

This is why we opt to present the daily overview through alternative platforms, such as digital screens displaying the current program, online searchable programme platforms on websites, or mobile applications. Once the printed programme has been created and circulated, it becomes static, unable to be altered, and ceases



to provide accurate information to attendees. Over the past six years, I have provided guidance for over 30 congresses and conferences. During this time, I have observed a shift away from static programs towards dynamic alternatives that offer various additional features, such as full-text search and customizable search filters and also connection to multimedia content or interactive functions. These crucial tools fill the gap left by “the missing link”

Henry Hooghiemstra: Adams Lebeda's view on designing a congress programme provides an interesting view on current practice and arguments. The idea that recent congress schedules are busier than thirty years ago is a misappreciation of the past. I admit, in case of no-shows Adam's strategy has an advantage as gaps in the series of talks of a session can be avoided by reshuffling the sequence of talks. However, the immediate consequence is that planning a personal navigation route through the sessions is not possible. Modern practice gives the impression that a commercialized congress programme is mainly developed on the days before and during the congress. Arguments to do so follow from the money-driven narrow time slot a commercial party has available. The needs of the congress participants, who all together are spending over an order of magnitude much more money, are being neglected in modern practice. Modern commercialized programming is driven by profit, not by providing congress participants the necessary information in time. Complaints echoed over the 2023 INQUA and 2024 IPC congresses; not too loud of course as participants are the guest of the hosting university and like to behave as a guest. My suggestion to the Boards of INQUA and IPC is to examine the opinion of their congress participants. We should not return home with frustration about the missed talks, but an exciting programming should make us smile.

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For the organizing Committee of XXI INQUA 2023 ROMA
Francesco Latino Chiocci¹, Laura Sadori², Ilaria Mazzini³, Alessandro Maria Michetti⁴

Reply to: “The Missing Link; the challenge of making a congress programme”

THE COMPLEXITIES OF MULTI-SESSION CONGRESSES. ADAPTING CONGRESS PRACTICES TO MEET MODERN NEEDS

Multi-session congresses, by their very nature, present significant logistical challenges. The discussion on congress organization and programming raises essential points about the evolving nature of academic and professional gatherings. While traditional methods of printed schedules and books of abstracts have their merits, their environmental cost cannot be ignored. By adopting eco-friendly practices (i.e. prioritizing digital solutions), congress organizers can reduce their ecological footprint, aligning their operations with the growing global emphasis on sustainability.

It is equally crucial to recognize the dynamic needs of modern congress participants often engaged and committed in different roles and management bodies, which may arise in last minute commitments, so preventing their participation. As INQUA congresses grow in scale and complexity (Table 1), their structures must evolve to meet contemporary expectations and technological advancements.

CHANGING WITH THE TIMES. THE ROLE OF TECHNOLOGY IN ENHANCING USER EXPERIENCE

Multi-session congresses, by nature, require precise planning and robust communication tools. The proposal for comprehensive tables and detailed printed overviews aligns well with the expectations of participants who value clarity and preparation. However, as Adam Lebeda astutely points out, the inherent fluidity of congresses, including last-minute changes, no-shows, and reshuffled schedules, often renders printed programs outdated before the event even begins. This reality necessitates a shift towards hybrid solutions that balance the permanence of printed materials with the

Year	Location	# delegates	# countries
2003	Reno	1069	46
2007	Cairns	993	51
2011	Bern	2100	70
2015	Nagoya	1790	69
2019	Dublin	2305	75
2023	Rome	2749	89

Table 1: Data on the last six INQUA congresses.

¹ Chairperson
² Vice Chairperson
³ Secretary General
⁴ Scientific Programme Chair

flexibility of digital platforms. To address these challenges effectively, the INQUA congress organizers have adopted a hybrid approach. As in the last INQUA congresses, a condensed printed guide containing key overviews (e.g., session timelines, room locations, and themes) has served as a basic tool for participants. This printed guide provided a static foundation for planning, focusing only on high-level information. Mobile apps and web platforms have taken center role in delivering dynamic content, allowing real-time updates, as well as customizable schedules, and full-text search options. These tools have empowered participants to adapt to changes seamlessly and plan their congress experience on the go.

While commercial outsourcing for large congresses can be a practical approach to manage the logistics, it is essential to ensure that participant needs remain the central focus. At the XXI INQUA Congress, researchers themselves managed the digital platform to ensure the program was updated effectively and thoughtfully. This included tasks such as promoting posters to oral presentations and rearranging empty slots to maintain a coherent schedule. These efforts, carried out throughout the week of the congress, prioritized user experience over cost-savings or profit-driven objectives. Hence, it is surprising to read criticism regarding program changes not being adequately reflected in the mobile apps and website, especially since we received no significant complaints during the congress, apart from minor issues or very minor problems. INQUA LOCs have consistently worked to address concerns and foster positive relationships with participants.

However, we recognize that the issue raised by Henri Hooghiemstra highlights an important concern. Misleading information, program gaps, and unannounced changes are increasingly common in large meetings and congresses. To address this, INQUA will take proactive steps to enhance program clarity and responsiveness, ensuring that participants leave the congress feeling inspired and satisfied rather than disappointed. By adopting participant-focused solutions, we aim not only to resolve current concerns but also to strengthen the reputation of INQUA congresses as leading platforms for scientific exchanges.

Pierluigi Pieruccini¹, Andrea Zerboni²

News from QI and QEH

Another year of activity for the official journals of INQUA and Elsevier is coming to a close.

This year has seen numerous special issues, a high volume of manuscript submissions, thorough peer reviews, and the successful publication of many papers in Quaternary International (QI) and Quaternary Environments and Humans (QEH). In 2024, these journals have once again proven to be vital platforms for the Quaternary scientific community, facilitating the dissemination of groundbreaking research.

To celebrate the successes of QI and QEH, we are excited to introduce a new feature in the Quaternary Perspective newsletter: the Editor's Choice Corner. This column will showcase the papers that the Editorial Boards

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of QI and QEH considers particularly noteworthy—either because they address pressing issues within the INQUA community, present innovative results, or showcase new methods or approaches.

In the boxes, you will find the first 3 papers selected by Pierluigi for Quaternary International and those chosen by Andrea for Quaternary Environments and Humans.

Quaternary International Editor's Choice Corner

Updated Peru archaeological radiocarbon database, 20,000–7000 14C BP.

Kurt Rademaker

Vol 703

This paper provides a new database including 493 radiocarbon dates that update the Peruvian archaeological radiocarbon dataset for the Late Pleistocene to early Middle Holocene.

Thermocline-level connectivity between the Tropical Equatorial Pacific and Tropical Northeast Pacific during deglaciation

Alberto Sanchez, Jose Carriquiry

Vol 705

This paper focusses on the reconstruction of the water column structure and the change in ocean circulation at the thermocline level during deglaciation along the Pacific coasts of America between the California Bay and Ecuador

Past fire dynamics in sub-Saharan Africa during the last 25,000 years: Climate change and increasing human impacts.

L. Bremond, J.C. Aleman, C. Favier, O. Blarquez, D. Colombaroli, S. E. Connor, C. E. Cordova, C. Courtney-Mustaphi, A. N. Dabengwa, G. Gil-Romera, W.D. Gosling, T. Hamilton, V. Montade, A.H.I. Razafimanantsoa, M. J. Power, E. Razanatsoa, I. Yabi, B. Vanniere

Vol 711

The paper suggests the drivers of long-term fire dynamics in various regions of Sub-Saharan Africa synthesising and updating the sedimentary charcoal records, from 25,000 years ago to the present.

Quaternary Environments and Humans Editor's Choice Corner

Human membership in the large carnivore guild: Was it always "tooth and claw"?

J.D. Speth

Vol 2

This paper explores the crucial cultural innovation introduced when humans began acquiring meat on a regular basis and onset of competition with other carnivores. Considering the archaeological record and ethnographic evidence, the authors proposed a fresh interpretation of humans as carnivores.

Comment to the ICS Anthropocene decision: From stratigraphy to storytelling

H. Kilhavn, J. Shipp, A. Bertheussen

Vol 2

This short comment is the result of the discussion on the significance of the Anthropocene in the context of archaeological research performed during the activity of a winter school for PhD students in Archaeology. The paper explores the significance of this debated epoch looking at its diachronic onset as preserved in the archaeological record.

How and why is Homo sapiens so successful?

R. Deniel, L. Hurcombe

Vol 2

Authors explore the ability of H. sapiens to quickly colonize most of the Old World, and argue the main factors controlling this huge success, including their reproductive rate, brain development and dietary adaptation.

Matthieu Giaime¹, Gaia Mattei², Claudia Caporizzo³, Ana Novak⁴, Driss Chahid⁵

Report from the 1st OnSea meeting

The first OnSea meeting took place in Montpellier (France) between 11th and 12th of October 2024 at the premises of Université Paul-Valéry Montpellier 3. OnSea (Evolution of Seascapes) is an INQUA funded CMP project (nr. 2404) aimed at creating a large interdisciplinary community sharing common interest in the study of the geomorphological evolution and the human occupation of the coastlines during the Holocene.

The first day was split into two parts with a morning session dedicated to scientific presentations and discussions and an afternoon guided visit of the exhibition "RivÂges, 20 000 ans d'évolution des paysages littoraux" at the Musée de l'Ephèbe - a museum dedicated to submerged archaeology located in the coastal city of Agde. The participants were able to witness firsthand the archaeological remains reflecting the last 20,000 years of coastal evolution of the broader area which were accompanied by an excellent explanation by Benoît Devillers – one of the creators of the exhibition. We gathered our impressions from the first day at a social dinner. The second day of the meeting was completely dedicated to scientific presentations and discussions.

Our first meeting was able to gather a really diverse group of more than twenty researchers coming from multiple continents and predominantly representing Early Career Researchers. The participants were coming from 15 different countries including: Brasil, France, Greece, India, Ireland, Israel, Italy, Morocco, Portugal, Slovenia, Spain, Sri Lanka, Türkiye, United Kingdom and the United States. We were impressed by the quality of the presentations and the excellent research



Figure 1: Group photo of the participants of the 1st OnSea meeting, 11-12th October 2024, Montpellier (France).

done by members of our community and look forward to our future joint activities.

For all future announcements regarding the OnSea project, follow the [OnSea website](#), and our social media at [Instagram](#), [Facebook](#) and [X](#).

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- ⁵Cadi Ayyad University (Morocco)

Eleonora Regattieri¹

Italian Paleoclimatology Discussion Days Event Overview



On September 19–20, 2024, the National Research Council of Italy (CNR) hosted the *Italian Paleoclimatology Symposium* at its headquarters in Rome. This two-day event, organized by the CNR working Group “Paleoclimate Dynamic” and funded by the CNR Department of Earth System Sciences and Environmental Technologies provided a platform for the Italian scientific community to explore current opportunities, resources, and emerging themes in paleoclimatic and paleoenvironmental research.

The first morning focused on Italy’s research infrastructure, including presentations on available facilities for sediment and ice core analysis, tools for tephra studies, and the potential of the CNR research vessel GAIA BLU. The CRISPY database, a virtual network of infrastructures for paleoclimatology research hosted on the [WG website](#) was

also presented.

The afternoon highlighted opportunities for collaboration and funding. Experts shared insights on international initiatives such as IODP and ICDP, polar research programs, and ERC funding schemes. Discussions also centered on networks like INQUA and PAGES, emphasizing their roles in fostering international connections. It also hosted brief presentations on Italian scientific Journals of interest for the paleoclimate community.

The second day shifted to English, with a focus on scientific advancements and research priorities. Keynotes from distinguished international speakers addressed critical topics, including transitions in the Quaternary (Chronis Tzedakis), climate variability from ice cores (Emilie Capron), and extreme temperatures

during Paleocene-Eocene climates (Lucas Lourens). Presentations of major projects such as BEYOND EPICA, ICDP-DOVE, and ICDP-MEME showcased Italy’s contributions to understanding past climates.

The event concluded with a discussion on future priorities and collaboration, emphasizing the need for synergy between Italian and international initiatives. The nearly fifty attendees, from CNR, Universities and other Research Entities, appreciated the opportunity to connect, exchange ideas, and collectively advance the field of paleoclimatology.

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Kumar Akhilesh^{1*}, Prachi Joshi¹, Razika Chelli Cheheb², Anupama K³, Doris Barboni³, Vandana Prasad⁴, Yanni Gunnell⁵, Mohammad Sahnouni⁶, Sileshi Semaw⁶

PalaeoHome - Year 1

Palaeolithic Hominins and Habitats: Out of Africa to South Asia

INTRODUCTION

Evidence of enduring preference among hominins for particular geographic places or habitats over long periods is a global phenomenon in the Palaeolithic. PalaeoHome brings together experts primarily working in India and Africa to debate questions relating to the 'Out of Africa' story as documented by variability in chronology, palaeoenvironments and evolutionary trajectories and behaviour during the Lower Palaeolithic (Early to Middle Pleistocene). Comparative studies between Lower Palaeolithic assemblages and their ecological settings in key areas from Africa to India and further east, carry implications for understanding the routes and chronologies of migrations, and the evolution of Oldowan and Acheulian technocomplexes. We seek to build interdisciplinary networks of Early Career Researchers (ECR), Developing Career Researchers (DCR) and Senior Scholars (SS) working on diverse aspects of this topic to discuss alternate viewpoints. PalaeoHome is divided into two components: a local focus on India, and a global focus drawing in scholars from across the world.

ACHIEVEMENTS OF PALAEOHOME IN YEAR 1 (2024)

Research: A field excursion was conducted in northern Tamil Nadu, South India, with a multidisciplinary team of scientists (11th-13th March 2024), during which key issues were discussed relating to multiple methods to date Early Pleistocene sites in India, and new approaches in the study of Lower Palaeolithic palaeoenvironments and lithic

assemblages. Fieldwork at and around the Lower Palaeolithic sites of Attirampakkam (ATM) and Sendrayanpalyam (SEN) (Fig. 1) led to the discovery of new Acheulian sites, collection of samples of sediments and rocks for luminescence and terrestrial cosmogenic nuclide (TCN) dating and geochemical, phytolith and isotope studies. This was combined with a hybrid brainstorming session to discuss research strategies to establish the way forward for PalaeoHome and develop the foundations for a database and research publication. [In-person participants: Yanni Gunnell, Anupama K., Doris Barboni, Vandana Prasad, S. Prasad, Naveen Chauhan, Pramod Singh, Shubhadip Bhadra, Kusuma K. N., Muthusankar Gowrappan, G. Orukaimani, Sutonuka Bhattacharya and Shanti Pappu; Online: Ashok Singhvi, Rathanasiri Premathilake, Anand Pandey, Karthick Balasubramhaniam].

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Public outreach:

Sparse awareness of human origin studies in parts of the Global South necessitates active science communication through multiple platforms. This was successfully achieved by Indian and African ECRs in Year 1. This comprised activities in collaboration with SCHE in Chennai, IFP in Pondicherry (India) and CNRPAH in Algiers (Algeria). Workshops in India comprised "Let's Explore Prehistory" (19th March and 22nd August, Madras Day Special); "Ask an Archaeologist" (29th August: online session in collaboration with SCHE for interaction with school children). Workshops in Algeria comprised "Kid sapiens archaeologist" with both activities for children and a visit to the site of Tighennif (Fig. 2).

ECR skills**development workshop:**

This was entitled The Lower Palaeolithic: Lithics and Landscapes (31st August-4th September 2024) (<https://www.palaeohome.com/team-1>). Ten participants were selected from a large application base to join us in learning and discussing recent approaches in field and laboratory studies of the Lower Palaeolithic, to develop interdisciplinary perspectives, to facilitate networking amongst the selected ECRs, and to highlight areas of potential future research collaboration (Fig. 3). The workshop was inaugurated with eminent archaeologists at the State Department of Archaeology, Government of Tamil Nadu, India, presided over by Thiru T. Udhayachandran (IAS, Principal Secretary to the Government of Tamil Nadu, Finance Department, and Commissioner [Full Additional Charge], Department of Archaeology), Dr R. Sivanantham (Joint-Director, Tamil Nadu State Department of Archaeology), Dr D. Dayalan (Advisor to Tamil Nadu State Department of Archaeology), Prof. S. Pappu (Vice-President of INQUA-HABCOM, Secretary, SCHE and Visiting Professor, SIAS, Krea University), Dr V. Prasad (Former Director of the Birbal Sahni Institute of Palaeosciences, Lucknow) and Dr Anupama K. (Researcher, Ecology, French Institute of Pondicherry, Puducherry).

The workshop was structured to comprise different



Figure 1: Interdisciplinary research at Palaeolithic sites at and around Attirampakkam and Sendrayan-palyam, Thiruvallur district, Tamil Nadu.

sessions, with a combination of an audio-visual interactive lectures, hands-on activities including lithic knapping and laboratory work, and discussions. Day 1 comprised a talk highlighting key issues in the Indian Lower Palaeolithic (Prof Shanti Pappu, SCHE, India). Interaction was facilitated through activity sheets. Two interactive online lectures were delivered by Dr Razika Chelli Cheheb (CNRPAH) with a vibrant question-answer session [Part-1: Early hominin exploitation of animal resources between 2.4 and 1.7 million years ago: evidence from the Plio-Pleistocene sites of Ain Boucherit and El-Kherba (Ain Henech, Algeria); and Part-2: Homo erectus subsistence behaviour in North Africa: new evidence from the Acheulean site of Tighennif (Northwestern Algeria)].

Day 2 was dedicated to skills development around understanding theoretical and methodological issues when analysing Lower Palaeolithic lithics. This was conducted through talks and hands-on lithic knapping sessions (bipolar technology, core and flake reduction, large core reduction, and bifacial flaking). This was led by Dr Kumar Akhilesh, and participants were encouraged to develop an awareness of choices made in raw material selection, principles of

knapping, decisions made during knapping, and analysis of the knapped lithics.

On Day 3 participants were expected to make appropriate choices in the selection of suitable raw material blanks, following which they attempted to knap handaxes. At the end of each experiment, participants had to fill in worksheets with their observations. Dr Prachi Joshi introduced participants to the applications of photography, photogrammetry and 3D morphometrics for the documentation of sites and lithics, with examples drawn from the sites of ATM and SEN. An important component comprised the use of the lithics produced for the manufacture of a wooden digging stick while documenting all stages in the process. Opening and

dissection of crabs using stone flakes and anvils led to a discussion on the alternate use of flakes and subsequent impacts as seen through macroscopic edge wear. The day concluded with an online talk by Dr Rathnasiri Premathilake (University of Kelaniya, Sri Lanka) [Palaeobotany and taphonomical issues at prehistoric sites].

On Day 4, participants interacted with other PIs (K. Anupama, D. Barboni) and other scientists at the IFP, Puducherry, Tamil Nadu (Mr. S. Prasad, Mr. G. Orukaimani). Introductory demonstrations of laboratory protocols for pollen and phytolith extraction from sediments were organized, with examination of particle morphologies under the microscope. This was followed by poster displays at the IFP and interactions with the scientists present. The lecture



Figure 2: Public outreach activities around the theme of prehistory for school children and teachers in A-B. India; C. Algeria



Figure 3: PalaeoHome ECR workshop "The Lower Palaeolithic: lithics and landscapes" which participants learned and discussed the recent approaches in field and laboratory studies. They also participated in the hands-on handaxe-knapping session and used their flakes in practical applications.

session was inaugurated by Dr Renaud Colson (Director of IFP, Pondicherry). Dr Doris Barboni (Head of the Department, Ecology, French Institute of Pondicherry) delivered a lecture (Phytoliths: The Good, the Bad and the Ugly) and interacted with the participants. Prof Pramod Singh and Prof Subhadip Bhadra (Department of Earth Sciences, Pondicherry University) delivered a talk (An overview of geomorphology and its applications).

On Day 5, the workshop concluded with a field trip to Attirampakkam, Thiruvallur district, Tamil Nadu, where discussions focused on the nature of Palaeolithic sites, geomorphological evolution of the landscape during the Early and Middle Pleistocene, site formation issues, cultural evolution and technological changes at the site, palaeoenvironmental studies, and geochronology. The day concluded with a valedictory function where each participant received a certificate for the successful completion of the workshop. In addition, plans were laid out on modes to interact with the participants for research projects. This was initiated with geoarchaeological collaboration involving three participants from a geology background. The workshop was a

significant achievement in terms of introducing participants from diverse disciplines to the importance of holistic studies aimed at reconstructing Lower Palaeolithic hominin behaviour.

Networking with like-minded INQUA projects:

As a part of networking with other projects, Dr Kumar Akhilesh was invited by the Mapping Ancient Africa forum to speak about PalaeoHome (Thursday, June 20th, 2024).

ECR networking and discussion meetings:

To facilitate networking amongst ECRs, PalaeoHome ECRs Dr Prachi Joshi and Dr Razika Chelli Cheheb are organising a series of online talks for early career researchers working on the various aspects of the Lower Palaeolithic. Through this series, the ultimate aim is to create a network

between the ECRs working on the Lower Palaeolithic to facilitate collaboration and research discussion forums (<https://www.palaeohome.com/>; <https://www.youtube.com/@PalaeoHome>)

Lower Palaeolithic Networking Hubs: PalaeoHome establishes a common platform for brainstorming on issues of global and local significance. Meetings and brainstorming, including a training component, will be optimized as hybrid meets through two hubs – an African and a South Asian one. By having hybrid meetings and social media outreach, INQUA members can attend key lectures and participate in Q & A sessions, thereby enhancing knowledge levels of little-known regions such as India. By engaging with experts from multiple disciplines we will address themes relating to geochronology, palaeoenvironments, technology and modelling; and we will generate a database of key sites while establishing synergies with other INQUA groups who are working with similar goals. A key part includes skill development among ECRs, who will join us in engaging in public outreach and science communication to generate awareness of prehistory among children, teachers and the wider public.

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

News from the TERPRO community

The TERPRO community is, as always, extremely active in organizing scientific events all over the world. In this edition of Quaternary Perspectives, we have decided to feature a report on the activities carried out during the PATA Days 2024, held in Chile, which also included a workshop within the CHAMP project funded by INQUA. Below, you can read the report by Gabriel Easton, researcher at the Universidad de Chile and chair of PATAChile2024.

INQUA is launching its new website, featuring a more modern design enriched with information and images. We invite you to help enhance the pages of the TERPRO Commission by sharing images you have taken during your fieldwork from around the globe. If you'd like to contribute, simply send one or two spectacular images [to Andrea](#).

To conclude, this issue of the TERPRO pages in QP host Sandro



Rossato as author of the Pictures from the field box. Sando is an Italian researcher interested in reconstructing the evolution of alluvial plains and will report on his project in NE Italy that is part of the larger CARG project for the 1:50.000 geological mapping of Italy. Geological mapping of Italy, including outcropping and buried Quaternary deposits, has been recently resumed and supported by ISPRA (Istituto Superiore per la Protezione e la Ricerca Ambientale). Enjoy!

PATADays Chile 2024

PATA is the most significant workshop on earthquake geology and active tectonics of the INQUA - TERPRO (Terrestrial Processes, Deposits &

History) Commission, which encourages the development of research on Quaternary continental environments and tectonics together with the mitigation of social impacts from natural hazards.

For the first time in South America, the 12th international INQUA meeting on Paleoseismology, Active Tectonics and Archaeoseismology (PATA) was held in Los Andes, central Chile, between October 6-11, 2024. On this occasion, we hosted 80 people coming from the Americas, Africa, Europe, Asia, and Oceania.

77 works were presented as oral or poster dissertations, encompassing the research fields on earthquake geology and active tectonics, also including

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neotectonics, paleoseismology, paleotsunami, archaeoseismology, and seismic and cascade hazards.

In addition to oral and poster presentations, the conference included 3 intra-meeting fieldtrips; two of them to visit outcrops and trenches on thrust faults at the western foot of Andes -the San Ramón and the Cariño Botado fault systems-, and one for paleotsunami record in Quintero area, along the coast of central Chile. Optional pre-meeting and post-meeting fieldtrips to visit geological record of active tectonics associated to intraplate faulting and megathrust earthquakes along the coast of the Atacama Desert in northern Chile, and to the eastern Andean orogenic thrust front in Argentina, travelling across the Andes to Mendoza region, were also made.



Pictures from the Field

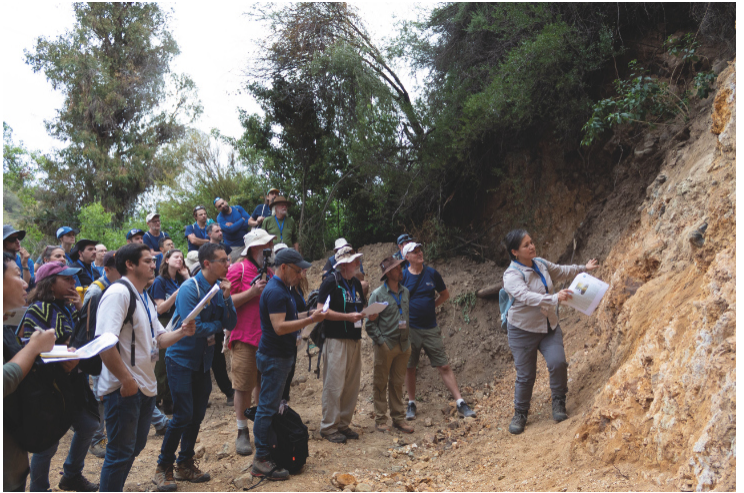
Sandro Rossato is a researcher at the Italian National Research Council – Institute of Geosciences and Earth Resources (CNR-IGG) specialized in studying large sedimentary systems in alluvial plains and geological mapping. He is currently contributing to the CARG project, a government initiative aimed at creating up to date 1:50.000 geological maps of Italy. This project adheres to standardized guidelines for fieldwork and map design to ensure clarity and interoperability. Each map is supplemented by a geodatabase containing data from field observations, well/core stratigraphies, mineral and pollen analyses, and radiocarbon dating. This standardized database benefits compilers and users by providing consistent, reliable data essential for analysis, mapping, and regional planning. In the framework of the activities to produce the 127 – Mestre geological sheet (survey led by Prof. Paolo Mozzi of the University of Padova) deep cores were acquired to study the Pleistocene stratigraphy of the Venetian plain (Fig. 1). Dating Quaternary sediments older than the Last Glacial Maximum can be challenging due to the limitations of radiocarbon dating. To address this, some sandy layers were collected using sealed pipes (Fig. 2) to protect them from sunlight exposure, allowing them to be dated using Optical Stimulated Luminescence (OSL) at the luminescence laboratories in Freiburg.



Coring activity in the Italian lowlands, a few kilometres from Venice.



Sealed tubes with sandy samples to be dated with the OSL.



The conference was sponsored by the International Union for Quaternary Research (INQUA), the Geological Society of Chile, the National Disaster Prevention and Response Service (SENAPRED), and the National Seismological Center (CSN).

Travel grants for students and early career researchers were provided by the CHAMP (INQUA) and OLLIN (IGCP, UNESCO) projects.

As an organizing committee, we are grateful to have had the opportunity to host this important meeting in the active subduction margin of the Nazca plate beneath the South American plate, with the Andes as inspiration for scientific discussion around the most outstanding advances in earthquake science and active tectonics, in an atmosphere of friendship and collaboration, which characterize the PATAs. PATAChile2024 represented the opportunity to fulfill the proposal to hold this scientific congress in our continent, something initially planned for 2020 and then 2021, but that was not

possible due to the Covid-19 pandemic.

We thank to the Municipality of San Esteban, and especially to the children, teachers, and people from the schools who participated in outreach activities specially designed and carried out within the framework of the conference, allowing for the interaction with the international community of Earth scientists. We also thank the staff of Termas El Corazón, the meeting venue, and all the people who contributed to the development of this event in the different locations visited. We thank prof. Sofía Rebolledo (University of Chile), Pamela Jara (Sociedad Geológica de Chile), Roberto Valles (University of Chile), and all the students that helped with the organization of the fieldtrips. Likewise, we are grateful for the administrative and logistical support provided by William Godoy, Verónica Carrasco and Mónica Sorondo, as well as the work of Mauricio Marchant (web manager), and Rodrigo López and the team of journalists from the University of Chile. The organizers specially thanks to Elisa

Avendaño, along with prof. Sonia Pérez and her team, for the special moment experienced during the Mapuche ceremony held on Calán hill. The edition of the abstracts volume was financed by project Fondecyt #1241021.

On behalf of the organizing committee,

Dr. Gabriel Easton
Chair, PATAChile2024

Organizing - Scientific Committee:

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- Gabriel González, Universidad Católica del Norte
- Luisa Pinto, Universidad de Chile
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