PAGES 2025
7th OPEN SCIENCE MEETING
5th YOUNG SCIENTISTS MEETING

Earth System Changes *from the Past towards the Future*

PAGES 2025 ABSTRACT BOOK

7th OPEN SCIENCE MEETING

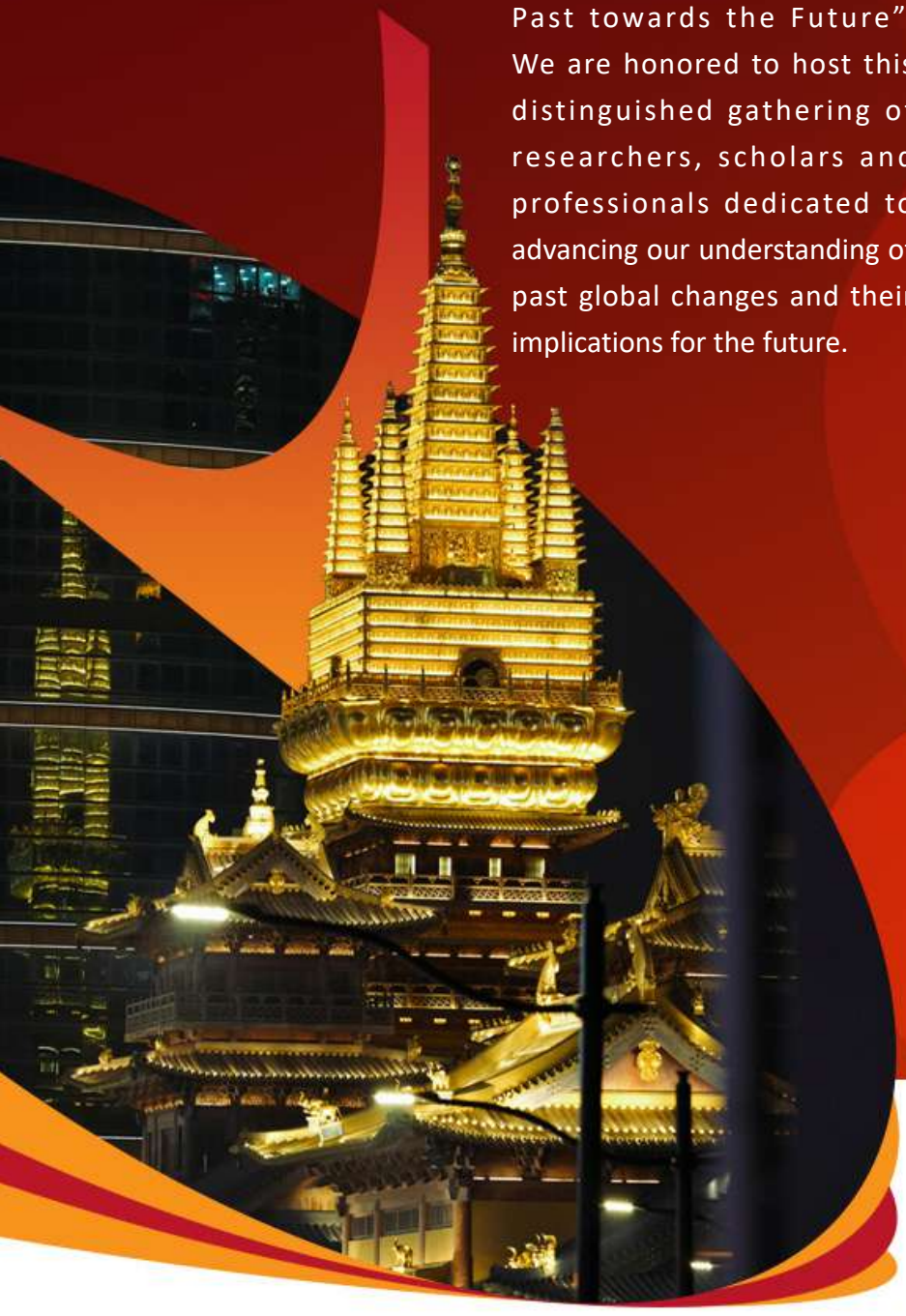
21-24 May 2025 | Shanghai, China

CHINESE ACADEMY OF SCIENCES

swiss academy of sciences

Welcome Message

From the Chairs of Scientific Committee



Dear participants,

Welcome to the PAGES 7th Open Science Meeting. This meeting will focus on “Earth System Changes from the Past towards the Future”. We are honored to host this distinguished gathering of researchers, scholars and professionals dedicated to advancing our understanding of past global changes and their implications for the future.

This conference serves as a vital platform for interdisciplinary dialogue, bringing together experts from diverse fields to share the latest scientific findings, innovative methodologies and emerging perspectives. As we face unprecedented environmental and climatic challenges, fostering collaboration and knowledge exchange has never been more crucial.

Beyond the scientific program, we encourage you to take advantage of the opportunity to connect with colleagues, engage in thought-provoking sessions, and explore the local culture and surroundings. We are committed to creating an enriching and stimulating environment for all participants, and we sincerely appreciate your contributions to making this conference a success.

Warm regards,

Chairs

Martin Grosjean

Zhengtang Guo

Contents

1 Scientific Committee

Chairs

Martin Grosjean	University of Bern, Switzerland
Zhengtang Guo	Institute of Geology and Geophysics, Chinese Academy of Sciences, Beijing, China

Members

(in alphabetical order of the surnames)

Ilham Bouimetarhan	University Ibn Zohr, Agadir, Morocco
Aster Gebrekirstos	CIFOR-ICRAF, Nairobi, Kenya
Iván Hernández-Almeida	PAGES International Project Office (IPO), Bern, Switzerland
Fabrice Lambert	Pontifical Catholic University of Chile, Santiago, Chile
Marie-France Loutre	PAGES International Project Office (IPO), Bern, Switzerland
Yair Rosenthal	Rutgers University, New Brunswick, USA
Blas L. Valero Garcés	Spanish National Research Council (CSIC), Zaragoza, Spain
Liping Zhou	Peking University, Beijing, China

Local Organizing Committee

Co-Chairs

(in alphabetical order of the surnames)

Zhimin Jian	Tongji University, Shanghai, China
Zhifei Liu	Tongji University, Shanghai, China

Members

(in alphabetical order of the surnames)

Yanjun Cai	Xi'an Jiaotong University, Xi'an, China
Haowen Dang	Tongji University, Shanghai, China
Qiaomei Fu	Institute of Vertebrate Paleontology and Paleoanthropology, Chinese Academy of Sciences, Beijing, China
Juzhi Hou	Institute of Tibetan Plateau Research Chinese Academy of Sciences, Beijing, China
Chunju Huang	China University of Geosciences (Wuhan), Wuhan, China
Tiegang Li	First Institute of Oceanography Ministry of Natural Resources, Qingdao, China
Jian Liu	Nanjing Normal University, Nanjing, China
Huayu Lu	Nanjing University, Nanjing, China
Youbin Sun	Institute of Earth Environment Chinese Academy of Sciences, Xi'an, China
Cunde Xiao	Beijing Normal University, Beijing, China
Shiling Yang	Institute of Geology and Geophysics Chinese Academy of Sciences, Beijing, China
Kefu Yu	Guangxi University, Nanning, China
Enlou Zhang	Nanjing Institute of Geography and Limnology Chinese Academy of Sciences, Nanjing, China
Yan Zhao	Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, Beijing, China
Liping Zhou	Peking University, Beijing, China

Secretary General

Shouting Tuo	Tongji University, Shanghai, China

2 General Information

Introduction

The PAGES Open Science Meeting (OSM) is the PAGES flagship event held approximately every four years and is a much anticipated fixture on the paleoscience calendar.

Just before the OSM, PAGES will conduct the 5th PAGES Young Scientists Meeting (YSM) from 19-20 May 2025.

The 7th OSM will focus on “Earth System Changes from the Past towards the Future”. This conference aims to promote interdisciplinary scientific exchange and international collaboration, and to strengthen the connections among PAGES communities.

By integrating various spheres of the Earth's system, this conference will illustrate the changes in the key components of the Earth's surface system (air, water, ice, land, life, society, etc.) across timescales, with the ultimate goal of improving predictions for future climate and environment.

Themes

Earth System Changes

from the Past towards the Future

Location Shanghai, China

Dates 21-24 May 2025

Email

pages2025@tongji.edu.cn

Official Website

www.pages2025.org.cn

WeChat Official Account

PAGES 2025

Organizers and Sponsors

PAGES
PAST GLOBAL CHANGES

海洋地质
全国重点实验室
State Key Laboratory of
Marine Geology

中国大洋发现计划
INTERNATIONAL OCEAN
DISCOVERY PROGRAM, CHINA

in C, N, S, and TOC, and a decrease in magnetic susceptibility (k), especially towards the 30 cm top of the core. These trends are crucial for understanding how recent climate change is defined and contrasted with past climatic changes.

A comprehensive set of laboratory experiments will be conducted on each sample to characterize the magnetic properties of the sediments. The intensity and directions of natural remanent magnetization (NRM) will be measured, including declination (D) and inclination (I). Magnetic analyses will also include the acquisition of anhysteretic remanent magnetization (ARM) and isothermal remanent magnetization (IRM) up to saturation and hysteresis loops to study the magnetic mineralogy and grain size. All magnetic measurements will be conducted at the Institute de Physique du Globe de Paris (IPGP-Université Paris Cité), France.

An age-depth model will be constructed using ^{210}Pb and ^{137}Cs dating, complemented by radiocarbon dating. Paleomagnetic data will refine the chronology and reveal geomagnetic secular variation as additional markers. Notably, two tephra layers identified within the sedimentary sequence will serve as chronological constraints and provide insights into regional volcanic activity.

This multidisciplinary study offers a comprehensive understanding of the environmental history of Laguna Ñe Luan, contributing paleoclimate data for Patagonia. By integrating rock magnetic and geochemical analyses, we will uncover new insights into climatic and depositional processes that have shaped this region over the past millennia.

Keywords: Paleoenvironmental reconstruction, Geochemical analyses, Rock magnetism, Lake sediments, Patagonia

【A0286】-Poster

Palynological analysis of modern and archeological ungulate feces: Investigating taxonomic diversity and agropastoral practices in a little explored Andean area from south America

Florencia Agliano[1]*, Nadia Jimena Velázquez[2], Mariana Mondini[1]

[1]Laboratorio de Zooarqueología y Tafonomía de Zonas Áridas (LaZTA), IDACOR / Museo de Antropologías, CONICET/UNC. Av. Hipólito Irigoyen 174, Córdoba, Córdoba, Argentina. CP 5000., Argentina

[2]Grupo de Palinología y Bioantropología, IIPROSAM, CIC-CONICET/UNMdP. Deán Funes 3350, Mar del Plata, Buenos Aires, Argentina. CP 7600., Argentina
*fagliano@mi.unc.edu.ar

The pollen content of paleofeces is a valuable reservoir of paleobiological and cultural information. In South America, palynological studies have been conducted on ungulate paleofeces in Patagonia, but few studies have been performed in the South-Central Andes, a region with a long history of human-camelid interactions. Here, we present an exploratory study in El Bolsón (Catamarca, Argentina), an Andean high-altitude valley, aimed at assessing whether pollen spectra of Holocene ungulate paleofeces varies across taxa and/or agropastoral management. Feces and paleofeces were collected, and pollen was extracted from the inner part of both samples. Pollen identification and counts were carried out using an optical microscope and reference collections.

We first conducted an actualistic study, analyzing modern feces and interviewing local populations about agro-pastoral practices to model pollen spectra in a known environmental and cultural context. We studied 12 feces of domestic llamas (*Lama glama*, n=3), goats (*Capra aegagrus hircus*, n=6), and sheep (*Ovis orientalis aries*, n=3) from different agro-pastoralist contexts in wet season. Most presented high total pollen concentration (>6000 grains/gr). Goat feces were dominated by dicotyledons, including Asteraceae subf. Asteroideae (68-80%) and Fabaceae (10-24%), while monocotyledons, particularly Poaceae (91-98%), were predominant in llama and sheep feces. Interviews revealed that goats are kept overnight and released in daytime, whereas the llamas and sheep are kept enclosed in the same corral, where monocotyledons prevail.

For the archaeological application, we studied ungulate paleofeces from Los Viscos rockshelter (2464 masl), containing occupations spanning the last 1200 years. The zooarchaeological record suggests the historical importance of camelids, including vicuñas (*Vicugna vicugna*) and domestic llamas, unlike the modern dominance of European livestock. We selected 3 paleofeces from a stratigraphic unit radiocarbon-dated to 590±50 ^{14}C BP -one of which is an aggregate of at least three pellets crushed together. All samples were morphologically compatible with Artiodactyla. Unlike modern samples, paleofeces had low pollen concentration (<1000 grains/gr), except for the aggregated one (14453 grains/gr), which may relate to ecological, cultural, or taphonomic differences. Identified pollen types included *Poaceae*, *Asteraceae* subf. *Asteroideae*, *Chenopodiaceae*/*Amaranthaceae*, and *Lentibulariaceae*, among others.

We also compared these results with paleofeces of the same period from a previous multiproxy study at the site, where one pellet was aDNA-identified as goat (Petrigh *et al.* 2021). Low pollen concentration and similar pollen types were also found. Paleofeces pollen spectra are consistent with that of the modern goat sample, suggesting that these past animals probably were not enclosed in monocotyledon-dominated areas, as in the modern sheep and llama corral, and may have been wild or else handled under other conditions.

This new study contributes to the palynological analysis of late Holocene paleofeces from Andean South America. The results suggest that variability in feces pollen may be more influenced by agro-pastoralist practices than by taxonomic variation. They also highlight the importance of ethnographically-informed modern analogs in interpreting paleofeces. Future research will focus on broadening the modern sample to include seasonal variation and paleofeces from different site areas and stratigraphic units.

Reference:

Petrigh, R. S., N. J. Velázquez, M. H. Fugassa, L. S. Burry, M. Mondini and M. A. Korstanje, 2021. Herbivore coprolites from the South-Central Andes. A multiproxy study at Los Viscos Archaeological Site, Catamarca, Argentina. Journal of Archaeological Science: Reports 38: 103063. https://doi.org/10.1016/j.jasrep.2021.103063

Keywords: Paleofeces, Feces, Pollen, South-Central Andes, Camelids

【A0041】-Poster

Holocene on the High Country: A multi-proxy reconstruction of systemic paleoenvironmental sensitivity across high-altitude Australia

James Bakis[1]*, Dan Penny[1], Rebecca Hamilton[1]

[1]The University of Sydney, Australia
*james.bakis@sydney.edu.au

High-altitude environments are extremely sensitive to, and thus regarded ‘sentinels’ of, global environmental change. This is attributable to their geomorphology and ecology being strongly prescribed by the interaction between elevation and climate, which yields marginal conditions, amplified rates of warming, restricted habitat islands

PAGES 2025

7th OPEN SCIENCE MEETING
5th YOUNG SCIENTISTS MEETING

WEBSITE

WECHAT

Local Organizing Committee

State Key Laboratory of
Marine Geology, Tongji University

Add. 1239 Siping Road,
Shanghai 200092, China

Email pages2025@tongji.edu.cn