

Extreme Events Archived in GEological Records–EAGER 2023



March 2-3, 2023

Workshop and EAGER Breakout Discussion @ National Taiwan University (NTU)

Purpose: Great earthquakes, tsunamis, floods, and anthropogenic impacts have induced severe damage to human society, which demonstrates that our understanding of such extreme events and the co-evolving human-environment system is limited by short historical and even shorter instrumental records. The complexity and future risk can only be assessed by examining prehistoric natural and anthropogenic hazards from high-resolution geological records archived in lakes and oceans in order to study their extremities in a defined system. The EAGER 2023 workshop provides a unique platform to bring together our EAGER partners from Austria, Japan, and Taiwan, as well as their cooperators, to discuss the current progress and future cooperation of various international projects.

Locations: Shih-Liang Conference Center, NTU (臺大思亮館國際會議廳); Institute of Oceanography, NTU (IONTU; 臺大海洋研究所); Department of Geosciences, NTU (NTUGEO; 臺大地質科學系).

Lead organizations: IONTU; NTUGEO.

Co-organizations: Funding Program Taiwan-Austria (Ministry of Education, Taiwan and BMBWF, Austria); Earth Science Research Promotion Center, National Science and Technology Council (NSC), Taiwan; College of Science, COS-NTU; Science and Technology Research Institute of DE-Carbonation, NTU STRIDE-C; NTU Ocean Center; Research Center for Future Earth, NTU-RCFE.

Side-event*: Inauguration of NTU Computed Tomography (CT) Scanning Laboratory.

Committee: Jyh-Jaan Steven Huang (IONTU), Don Chih-Chieh Su (IONTU), Ya-Hsuan Liou (NTUGEO), Li-Hung Lin (NTUGEO), Pei-Ling Wang (IONTU), Liang-Chi Wang (CCU), Yuan-Pin Chang (NSYSU).

Contacts:

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Secretary in general: Dr. Yu-Chun Chang (c44971148@gmail.com).

EAGER 2023 Workshop, March 2nd, Oral Session
@ Shih-Liang Conference Center (思亮館國際會議廳)

Keynote presentation: 30+10 mins; Regular presentation: 15+5 mins

08:30-09:00	Registration
09:00-09:10	Opening Remark Chair: Prof. Don Chih-Chieh Su/Prof. Jyh-Jaan Steven Huang (IONTU)
09:10-09:50	Keynote Speaker: Ken Ikehara , Geological Survey of Japan & National Institute of Advanced Industrial Science and Technology (AIST) <i>Historical earthquakes recorded in surface sediments around the Japanese islands and future challenges</i>
09:50-10:10	Zhirong Cai , Kyoto University <i>Numerical calculation based inverse modeling of turbidity currents</i>
10:10-10:30	Arata Kioka , Department of Earth Resources Engineering, Kyushu University <i>Geomorphologically-inferred isolated depositional basins at the trench axis floors worldwide: Lessons from EAGER-Japan</i>
10:30-11:00	Group Photo & Coffee Break
11:00-11:20	Kan-Hsi Hsiung , Japan Agency for Marine-Earth Science and Technology (JAMSTEC) <i>Turbidite records of marine sediments: From Ryukyu Trench end to the floor</i>
11:20-11:40	Yuhji Yamamoto , Kochi University <i>Preliminary paleomagnetic results from the sediments recovered at Tokai, Nankai Trough, southwest Japan</i>
11:40-12:00	Pauline Cornard , Institute of Geology, University of Innsbruck <i>Supercritical flow and related deposits: a new tool to characterize the dynamic of a deep-marine system?</i>
12:00-12:20	Yu-Chun Chang , Institute of Oceanography, National Taiwan University & Japan Agency for Marine-Earth Science and Technology (JAMSTEC) <i>Hazards around the volcanic islands: Lessons from the frequencies and volumes of volcanoclastic turbidites</i>
12:20-13:40	Lunch
13:40-14:20	Keynote Speaker: Michael Strasser , Institute of Geology, University of Innsbruck <i>EAGER-Paleoseismology: Using lake records to test seismic hazards curves and perspectives for comparable research on event-stratigraphic records obtained by IODP Expedition 386 in the Japan Trench.</i>
14:20-14:40	Marcel Ortler , Institute of Geology, University of Innsbruck <i>Postglacial evolution of Lake Hallstatt (Austria): A sedimentological overview of the Hipercorig-Hallstatt-History project</i>
14:40-15:00	Don Chih-Chieh Su , Institute of Oceanography, National Taiwan University TBD
15:00-15:30	Coffee Break
15:30-15:50	Andrew Tien-Shun Lin , Department of Earth Sciences and Carbon Storage and Geothermal Research Center, National Central University National Central University <i>Extreme events in the incipient arc-continent collision zone of Taiwan: A review</i>
15:50-16:10	Neng-Ti Yu , National Tsing Hua University <i>The onshore and offshore records of long-distance volcanoclastic transport and deposit in Taiwan from the last two millennia</i>
16:10-16:30	Raúl Tapia , Institute of Oceanography, National Taiwan University

	<i>Foraminifera indices as a tracer of sediment transport and provenance: downcore applications off Taiwan</i>
16:30-16:50	Li-Hung Lin , Department of Geosciences, National Taiwan University <i>The NSTC new initiative: Observatory for terra-aqua interactions under climate change</i>
17:00-	Poster session/Inauguration of NTU CT Lab*/Workshop reception @ NTUGEO (臺大地質科學系)
18:00-18:15	Distinguished Guest's Remark of Lab Inauguration
18:15-18:30	Science keynote talk of the NTU CT Scanning Laboratory Gerald Degenhart , Institute of Geology, University of Innsbruck (TBC title: CT-scan principle application of computed tomography)
18:30-	Reception and discussion**

*We cordially invite you to the inauguration of the new " NTU Computed Tomography (CT) Scanning Laboratory." Our new lab, supported by the NSC, NTU, COS-NTU, NTU-STRIDE-C, NTU RCFE, as well as our industrial partners, is the first research facility in Taiwan that provides state-of-the-art laboratory infrastructure for high-resolution computed tomography (CT) Scanning of cores obtained by drilling and coring. We look forward many collaborations and exciting research to address some of the big challenges in geo-, paleoclimate-, paleoecology, and archeological sciences with partner institutes throughout Taiwan and around the world. Please join us to celebrate the lab opening!!

**Some labs in the NTUGEO building will also be opened during the reception time.

EAGER 2023, March 2nd, Poster Session @ Department of Geosciences, National Taiwan University	
P-01	Jun-Ting Lin , National Taiwan University <i>Using Non-Destructive Core Scanning Techniques and Multivariate Statistics to Decipher Sedimentary Characteristics of Turbidites Retrieved off Eastern Taiwan</i>
P-02	Yu-Hsun Shao , National Taiwan University Validation of a Machine-Learning Algorithm in Counting Methane "Bubble" Signals in the Northern South China Sea.
P-03	Radha Krishna Pillutla (National Central University) Seismogenic event beds in perched basins during the last 20 kyr: Examples from offshore SW Taiwan
P-04	Yen-Hsi Wu and Yao-Ming Liu , National Taiwan University <i>Principles and Application of Rotating X-Ray Computed Tomography System: a Glance at Geological Samples</i>
P-05	Andrew Tien-Shun Lin , National Central University <i>Variability of the salinity and temperature in the upper ocean of the NE South China Sea during the last 38,000 years.</i>
P-06	Science and Technology Research Institute for DE-Carbonization (STRIDE-C) Science and Technology Research Institute for DE-Carbonation
P-07	Jean Nicolas Haas , University of Innsbruck <i>The palaeoecological consequences of catastrophic mega-snow avalanches on the Holocene Alpine timberline above 2100 m a.s.l. in the Ziller Valley, Austria</i>
P-08	Yu-Huang Chen , National Taiwan University <i>The sedimentary record of the extreme event, examples from the South China Sea and Taiwan</i>
P-09	Jih-Hsin Chang , National Taiwan University <i>Architecture, formation and implication of active structure-controlled intraslope channel system southeast offshore Sendai, Tohoku, Japan</i>

P-10	Mark Chen , Bruker <i>Micro to nano CT imaging and analysis technique for geoscience · from micro-structure · composition to 4D image dynamic process</i>
P-11	Chuan-Yi Lin , Taiwan Instrument Research Institute <i>Medical Imaging Service Platform</i>
P-12	Jyh-Jaan Steven Huang , National Taiwan University TBD ()
P-13	Pei-Yuan Hung , Nikon <i>X-Ray Computed Tomography for Clean Energy and Effective Production to Approach Carbon Zero</i>

The discussion session is still open for proposing ideas. In principle, the session is only for Pls. However, if you are interested and would like to share your experiences, please contact the contact persons.

EAGER 2023 Workshop, March 3rd, Breakout Discussion Session @ Room 106, Institute of Oceanography, National Taiwan University	
09:30-10:00	Lab tour @ IONTU
10:00-10:30	Break
10:30-11:00	EAGER-Taiwan project discussion-I Biomarker isotopes by virtual discussion
11:00-12:00	EAGER-Japan project discussion IODP expedition 386 upcoming events. Cruises/research with Japanese research vessels in the Japan Trench, Ryukyu Trench, Kuril Trench and other areas.
12:00-13:00	Lunch
13:00-14:00	Japan-Austria-Taiwan joint training program (core facilities/universities cooperation) Taiwanese core respiratory
14:00-15:00	EAGER-Taiwan project discussion-II EAGER cruises discussion. Future expedition and cooperation
15:00-15:30	Break
15:30-17:00	EAGER-Austria project discussion Lake Hallstatt project discussion. High-resolution CT in the geological archives

Please note that some of the sessions may be limited to the project members as it will be an ongoing project discussion.