

Research Conference Program
"Calibrating Geological Records of Environmental Change from Lakes to Oceans"
Centro Stefano Franscini, Monte Verità, Ascona, Switzerland
5 to 10 July 2009

Sunday - Late afternoon arrival of participants at Centro Stefano Franscini
7:00 – 7:30 Welcome apéro followed by buffet dinner

Monday – Chemical Processes and Geochemical Signals in Modern Aqueous Systems

Morning: Modern geochemical processes and the carbon cycle

Moderator: *Stefano Bernasconi*

- 09:15 – 09:20 Introduction to Conference Program: *Judith McKenzie*
- 09:20 – 10:05 Keynote Speaker: *Cindy Lee*
Ocean acidification: The role of particles
- 10:05 – 10:25 *Bill Anderson* - Carbon and nitrogen stable isotope patterns in Florida: Examples from near shore marine systems and lakes
- 10:25 – 10:45 *Moritz Lehmann* - The St. Lawrence Estuary is holding its breath: But where exactly?
- 10:45 – 11:20 Coffee Break
- 11:20 – 11:40 *Benjamin Brunner* - Sulfur and oxygen isotope effects during sulfate reduction
- 11:40 – 12:00 *Michael Sturm* - The lacustrine ocean: Particles and sediments of Lake Baikal
- 12:00 – 12:20 *Angela Rebello Wagoner* - Indication of climate change in the Holocene in sediments from Cabo Frio upwelling
- 12:30 – 14:00 Lunch Break

Afternoon: Proxy signals of geochemical processes

Moderator: *Gerald Haug*

- 14:00 – 14:45 Keynote Speaker: *Harry Elderfield*
The origin of the Pleistocene carbonate cycles
- 14:45 – 15:05 *Stefano Bernasconi* - Mediterranean climate and hydrographic variability during the last 2000 years from a high-resolution oxygen isotope record from the Gulf of Taranto
- 15:05 – 15:25 *Samuel Jaccard* - Subarctic Pacific evidence for a glacial deepening of the oceanic respired carbon pool
- 15:25 – 16:00 Coffee Break
- 16:00 – 16:10 *Monte Verità Welcome Speech*
- 16:10 – 16:30 *Ola Kwiecien* – Last deglaciation as recorded in the Western Black Sea: A multi-proxy study
- 16:30 – 16:50 *David Hollander* - A 1400-year sedimentary record from the Pigmy Basin, Gulf of Mexico reveals strong decadal-scale linkages between solar variability, Gulf of Mexico moisture balance and hydrologic conditions over North American continent
- 16:50 – 17:10 *Lawrence Och* - Changes in the biogeochemical cycling during the Neoproterozoic Oxidation Event
- 17:10 – 17:30 *Philipp Heck* - Si and O isotope geochemistry of Archean and Paleoproterozoic banded iron formations (Isua, Transvaal, Hamersley, Biwabik)
- 18:00 – 19:00 Guided Tour of Monte Verità (2 groups)
- 19:30 – 21:00 Dinner

Tuesday - Physical Processes and Natural Hazards in Modern Lakes and Oceans

Morning: Physical processes and natural hazards

Moderator: *Judith McKenzie*

- 09:15 – 10:00 Keynote Speaker: *Steve Miller*
Earthquakes: The great carbon recycler
- 10:00 – 10:20 *Mike Coffin* - Environmental consequences of large igneous provinces
10:20 – 10:40 *Michael Strasser* - Mass wasting processes and tectono-stratigraphic evolution of an accretionary prism: Results from 3D-seismic interpretation and IODP drilling in the Nankai subduction zone of southwest Japan
- 10:40 – 11:10 Coffee Break
- 11:10 – 11:30 *Emmanuel Chapron* – Signature and significance of Late Quaternary sedimentary events in glacial lakes and fjords
11:30 – 11:50 *Matteo Bonalumi* - Suspended particles in reservoirs driven by pump storage operations
11:50 – 12:10 *Michael Sturm** - Paleo-environment of Lake Van, Turkey: Prospects of a new ICDP drilling site in 2010 [*replacing *Michael R. Talbot*]
- 12:30 – 14:00 Lunch Break

Afternoon: The paleo-record of natural hazards

Moderator: *Flavio Anselmetti*

- 14:00 – 14:45 Keynote Speaker: *Marc de Batist*
Lake sediments as archives of paleoseismic activity: Potential and pitfalls
- 14:45 – 15:05 *Georges Gorin* - Late Quaternary infill of Lake Neuchâtel (Switzerland) as derived from reflection seismics: Signatures of fault activity and deglaciation
15:05 – 15:25 *Katrin Monecke* - A rapidly prograding beach ridge plain in northern Sumatra as an archive for past tsunamis
- 15:25 – 16:00 Coffee Break
- 16:00 – 16:20 *Flavio Anselmetti* - The sediments of Lake Yashilkul, Tadjikistan: An earthquake-, rockfall- and climate-record from the high Pamir Mountains.
16:20 – 16:40 *Michael Schnellmann* - Tracking prehistoric earthquakes in lake sediments of Central Switzerland
16:40 – 17:00 *Helmut Weissert, Flavio Anselmetti & Michael Hilbe* - Introduction to the Field Trip
- 17:00 – 18:30 Optional Tea Ceremony (CHF 38.00/person. Book at hotel reception)
- 19:30 – 21:00 Dinner

Wednesday - Field trip to study geologic outcrops of ancient submarine sequences and modern *in situ* lacustrine sedimentary environment

Morning: Theme Paleoceanography - Southern alpine Mesozoic pelagic sections
Leader –*Helmut Weissert*, ETH-Zürich

Afternoon: Theme Natural Hazards - Lake floor morphologies - Geology on Lago Maggiore
Leader - *Flavio Anselmetti*, Eawag, Dübendorf

Evening: Conference Dinner on Isola di Brissago + Brazuka Jazz Quartet

Thursday – Paleoclimatic and Paleoenvironmental Records from Lakes and Oceans

Morning: Paleo-records from the Quaternary icehouse world

Moderator: *Daniel Ariztegui*

- 09:00 – 9:45 Keynote Speaker: *Dave Hodell*
Pleistocene history of North Atlantic climate variability
- 09:45 – 10:05 *James Channell* - Stacking paleointensity and oxygen isotope data for the last 1.5 Myrs (PISO-1500)
- 10:05 – 10:25 *Federica Tamburini* - Phosphorus speciation in marine sediments: A different approach to North Atlantic Heinrich events
- 10:25 – 10:45 *Jane Teranes* – Lacustrine carbonate records of Holocene climate from the North American Mid-Continent
- 10:45 – 11:10 Coffee Break
- 11:10 – 11:30 *Adrian Gilli* - Linkages between paleomagnetism, solar activity and cosmogenic radionuclides: Insights from sedimentary record of Lago Cardiel
- 11:30 – 11:50 *Daniel Ariztegui* - Hydrological variability in South America below the Tropic of Capricorn (Pampas and eastern Patagonia, Argentina) since the LGM
- 11:50 – 12:10 *Sebastian Breitenbach* - Holocene Indian monsoon history: A story from underground
- 12:10 – 12:30 *Nele Meckler* – Late Pleistocene climate in the West Pacific: A new speleothem record from Borneo
- 12:30 – 14:00 Lunch Break

Afternoon: Paleo-records from the Mesozoic greenhouse world

Moderator: *Helmut Weissert*

- 14:00 – 14:45 Keynote Speaker: *Elisabetta Erba*
Calcareous plankton in greenhouse world: Examples of Jurassic & Cretaceous oceans
- 14:45 – 15:05 *Dennis Kent* - Equatorial convergence of India and the rise and fall of early Cenozoic climate
- 15:05 – 15:25 *Helmut Weissert* – Stable and unstable oceans: Lessons from the Early Cretaceous
- 15:25 – 16:00 Coffee Break
- 16:00 – 16:20 *Ulrich Wortmann* - The improbability of carbon isotope excursions
- 16:20 – 16:40 *Silke Voigt* - High-resolution Late Cretaceous carbon isotope stratigraphy: Linking ocean and shelf-seas on a global scale
- 16:40 – 17:00 *Karl Föllmi* – Platform-basin interaction during the Cretaceous
- 17:00 – 17:20 *Martino Giorgioni* – Oceanic changes in a greenhouse world: Insights into Late Albian – Early Cenomanian sediments from W. Tethys and N. Atlantic
- 17:45 – 19:15 Wine Tasting at Azienda Viticola Garzoli, Maggia, Valle Maggia, Ticino
- ~19:30 – 21:00 Dinner

Friday – New Techniques and Future Approaches in Paleoenvironmental Studies

Morning: Geomicrobiology of sedimentary sequences

Moderator: *Crisogono Vasconcelos*

- 09:00 – 09:45 Keynote Speaker: *Pieter Visscher*
Microbial Records in Sedimentary Systems: What is biotic and how can we know?
- 9:45 – 10:05 *Tomaso Bontognali* - NanoSIMS: a new technology for the study of early life on Earth
- 10:05 – 10:25 *Maria Dittrich* - Nanoscale characterization of organic matter in modern stromatolites
- 10:25 – 10:45 *David Hollander* - A molecular, isotopic and organic geochemical analysis of freshwater microbialites
- 10:45 – 11:10 Coffee Break
- 11:10 – 11:35 *Yvonne van Lith* - Bacterial dolomite formation: Some applications
- 11:30 – 11:50 Patrick Meister - Limitations of dolomite formation in Earth's history and modern alkaline lakes
- 11:50 – 12:10 *Muriel Paction* - Bacterial Cretaceous Park: Reassessing the meaning of sedimentary organic matter
- 12:10 – 12:30 *Magali Schweizer* – How can molecular phylogenies help to improve the use of benthic foraminifer as proxies?
- 12:30 – 14:00 Lunch Break

Afternoon: Discussion Session on Future Scientific Directions and Pending Global Change

- 16:00 Departure of participants from Centro Stefano Franscini

Posters

Anelize Bahniuk, Crisogono Vasconcelos, A. Barros França & N. Matsuda - Microbialite occurrences in the Cretaceous Codo Formation – Northeast Brazil

Michael Hilbe - Morphology of the Maggia and Ticino/Verzasca river deltas

Peter Homewood, Monique Mettraux, S. Dirner & J. Mattner - Holocene carbonate-evaporite-clastic deposits on an Arabian Desert coast: Analogs for Cretaceous oilfield, but what about the proxies?

Rebecca Lundberg, Tomaso Bontognali, Judith A. McKenzie & Crisogono Vasconcelos - Modern stromatolites from Lagoa Salgada, Rio de Janeiro, Brazil: Role of methanogenic bacteria in carbonate precipitation

Carolina Reyes - Microbial respiration pathways controlling the fate and transport of arsenic

Rolf Warthmann & Crisogono Vasconcelos - The Geomicrobiology Laboratory, ETH-Zürich