

**Deel 3:**  
**Ondersteunende acties**

EINDRAPPORT

**BELLA : Belgische cluster rond onderzoek naar lacustriene systemen in  
het kader van de global change problematiek**

**BELLA : Réseau Belge de recherches lacustres dans le cadre  
du changement climatique global**

OA/15

*Wim Vyverman – Ghent University*  
*Jean-Pierre Descy - Facultés Universitaires Notre-Dame de la Paix*  
*Marc De Batist – Ghent University*  
*Annick Wilmotte – Université de Liège*  
*Luc André – Royal Museum for Central Africa*  
*Nathalie Fagel – Université de Liège*  
*André Berger – Université Catholique de Louvain*  
*Eric Deleersnijder - Université Catholique de Louvain*  
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Noch het Federaal Wetenschapsbeleid, noch eenieder die handelt in de naam van het Federaal Wetenschapsbeleid is verantwoordelijk voor het gebruik dat van de volgende informatie zou worden gemaakt. De auteurs zijn verantwoordelijk voor de inhoud.

Niets uit deze uitgave mag worden verveelvoudigd, opgeslagen in een gegevensbestand of openbaar gemaakt, in enige vorm of op enige wijze, hetzij elektronisch, mechanisch, door fotokopieën of enige andere manier zonder de aanduiding van de referentie.

## **Introduction**

An important part of the paleoclimate research agenda today focuses on comparatively modest, short-term, and regionally specific natural climate variability, and its relevance to human society. Reconstruction of these short-term climate changes is in many cases based on high-resolution lacustrine sedimentary records.

Furthermore, the status of freshwater resources has become a crucial global issue. Continuing growth of the human population and increasing use are outstripping available water resources in many regions of the globe and in particular in the tropics. Long- and short-term changes in climate are expected to exacerbate these problems. Additionally, demands and impacts not only increasingly influence human populations, but also natural ecosystems. These include, in addition to large lakes, many small lakes and peatlands, which are of major importance in the global carbon budget and thus control the global climate system.

At the same time, mechanisms underlying other medium to long-term changes need to be understood to develop reliable global climate models, in particular how polar regions mediated abrupt global climatic changes during deglaciation, and how tropical regions mediated solar climate forcing at decadal to century time scales during the Holocene.

Natural high-resolution glaciological and oceanographic records of climate change have recently been used to validate, modify and even reject existing models of global climate regulation. In order to fine-tune these climate models, increase their spatial and temporal resolution and evaluate the influence of changes in the Southern Ocean on the thermohaline circulation, a global network of accurate, trustworthy climate reconstructions based on natural climate archives needs to be developed. In particular, there is an urgent need for (lacustrine) high-resolution records from various latitudes in the Southern hemisphere, by which the influence of slow changes at high Southern latitudes on abrupt climate change in the North can be evaluated. Additionally, of prime importance is to determine to which degree and spatial extent, climate variability in the Southern hemisphere and tropical regions is regulated by climatic controls exerted by the Northern hemisphere or by the circum-Antarctic climate system. All in all, the tropics are probably the biggest wild card left in the understanding abrupt climate change.

The aims of the **BELLA** project were:

- to create a **Belgian network of expertise in limnology, limnogeology and paleolimnology**, based on projects funded by the Belgian Science Policy
- to enhance the **cooperation and communication between research teams** involved with lacustrine paleo-climate/environmental studies and working on lakes in the Southern Hemisphere, from Antarctica over mid-latitude South America to equatorial Africa,
- to provide more **visibility** to lake research conducted in Belgium and
- to **identify uncertainties and research priorities** within the context of national and international research agendas.

## **Summary of the main activities**

### **1. Development of a joint website**

A joint **website** was constructed as a source of information for the public and the scientific world (<http://intramar.ugent.be/bella/>). It provides:

- A general introduction to the project;
- An overview of the Belgian expertise in paleo- and neo-limnology,
- Links to individual research groups and international initiatives;
- Announcements of meetings

- Links the workshops and meetings

## **2. Organization of workshops and joint user committee meetings**

In order to establish and enhance communication between the different Belgian partners and the integration in international research initiatives, BELLA organized or co-organized **workshops** or provided a BELLA component in workshops and symposia. These events were meant for scientists in the field of neolimnology, paleolimnology, paleoclimatology and paleo-ecology.

### 2.1. 'Paleo-climate related studies in East African Great Lakes'

A workshop was organized on the 2/07/2004 at the Royal Museum for Central Africa (Tervuren) by Pierre-Denis Plisnier and Luc André. Two scientific talks were presented by Tom Johnson (Large Lakes Observatory, University of Minnesota Duluth, USA) and by Jean-Pierre Descy (Laboratoire d'Ecologie des Eaux Douces, Facultés Universitaires Notre- Dame de la Paix, Namur). For a complete program see annex 1.

### 2.2. Biological proxies – special session of the International Paleolimnology Symposium

This workshop was organized as a theme session of the 10<sup>th</sup> International Paleolimnology Symposium by Dirk Verschuren, Wim Vyverman, and Annick Wilmotte (June 25-29, 2006; Duluth, Minnesota, USA), to 1) ensure significant international participation and attendance and 2) increase the visibility of considerable Belgian initiative and expertise in this research domain. BELLA co-sponsored this conference session by reimbursing the meeting registration and banquet costs of 3 Belgian post-docs and 5 invited international experts (2 from USA, 1 from Canada, 1 from UK, 1 from Finland). Participation of invited speakers was solicited beforehand (in late 2005) to ensure that the theme session would provide adequate coverage of recent advances in biological paleolimnology. This was followed by an open invitation to interested researchers to contribute abstracts and presentations to this session of the Paleolimnology conference, by advertising it on the list server [PALEOLIM@LISTS.UFL.EDU](mailto:PALEOLIM@LISTS.UFL.EDU). Within the general Paleolimnology conference theme 'Past Ecosystem Processes and Human-Environment Interactions', the BELLA-sponsored session aimed to present state-of-the-art methodology and applications in a wide range of biological proxy indicators found in lake sediments. This included advances in quantitative paleoecology, novel combinations of biological proxies with other proxy information, fossil DNA and the paleogenetics of aquatic biota, and stable-isotope analyses of past community interaction and ecosystem processes. Emphasis was on the potential and specifics of paleoenvironmental reconstruction using paleobiological approaches, rather than on environmental or climate history *per se*. Good response to this invitation resulted in a full-day session of 15 oral and 15 poster presentations (see detailed programme below), of which 8 oral presentations were co-sponsored by BELLA. Participation of the 3 Belgian speakers (Joachim Mergeay, Katholieke Universiteit Leuven; Elie Verleyen, Ghent University; Hilde Eggermont, Ghent University) was further sponsored by FWO-Vlaanderen and/or the respective universities.

Although BELLA task managers took the initiative to put together a high-quality roster of invited speakers, decisions about acceptance of submitted abstracts and selection of presentations for oral time slots remained the responsibility of the local conference organizers (Prof. E. Ito, University of Minnesota; Prof. D. R. Engstrom, Science Museum of Minnesota). Consequently, BELLA task managers checked, and where necessary amended, the abstracts of potential BELLA invitees before submission to ensure that planned contributions provided the sufficiently broad perspective of the research topic

required for selection as an oral presentation. All 8 BELLA-invited contributions were awarded an oral time slot, and scheduled together in the morning part of the theme session. It was scheduled on the first day of the conference in the same hall as the opening plenary presentation, further contributing to solid attendance and visibility. The complete program can be found in appendix 2.

### 2.3. Integration of climate models, lacustrine, marine and glaciological records of climate change: state of the art, accomplishments and future directions – special session during EGU 2006

Two sessions were organized at the General Assembly of the European Geosciences Union in Vienna in April 2006. The session “*Integration of climate models, lacustrine, marine and glaciological records of climate change: state of the art, accomplishments and future directions*” was split in two within the general session *Climate: Past, Present, Future*

- Towards a theory of millennial scale climate variability. Convened by Andersen, K.; Steig, E.; Loutre, M. It included 4 oral presentations and 11 poster presentations
- Lake systems: sedimentary archives of climate change and tectonics. Convened by De Batist, M., Chapron, E.; Loutre, M.; Fagel, N. It included 12 oral presentations and 27 poster presentations.

Both sessions benefited from a large international attendance (see appendix 3 for papers presented by BELLA members and appendix 4 for an overview of the program). The event in 2006 led to the successful organization of similar special sessions during EGU 2007 and 2008 by the BELLA partners, and thus initiated the continued visibility of Belgian research in the framework of global change and lacustrine systems.

### 2.4. Productivity and ecosystem function of large lakes – BELLA workshop under patronage of The Royal Academy of Overseas Sciences Commission ‘Environment & Development’

A workshop was organised on 12/07/2007 by Jean-Pierre Descy, Wim Vyverman, Luc André, Eric Deleersnijder and Pierre-Denis Plisnier at the Royal Academies for Science and the Arts (Brussels) regarding the functioning and productivity of large lakes, with a focus on African water bodies. Sixteen papers were presented. The program highlighted the participation of Belgian scientists to recent research on large tropical lakes, particularly Lake Tanganyika, thanks to the support of BELSPO and FNRS. Talks also dealt with Lake Victoria and Lake Kivu, where the research is ongoing with African partners, and with other colleagues. Also research in Chilean large lakes was covered by two presentations. A detailed program can be found in Appendix 5.

### **3. Production of film regarding research in Lake Kivu**

The film ‘Trois pays pour un lac’ was produced on the activities carried out in the framework of the Ecosyki project financed by the “Commission Universitaire pour le Développement” (CUD). The film was co-financed by the FUNDP, FUCID and CUD and presents the scientific and training activities of the project as well as the way of diffusion through local user committees. It also shows the way of partnership progressively built in the project. The film is available for diffusion by contacting J.P. Descy or the Savé (FUNDP). It can also be viewed on the FUNDP web site:

<http://www.fundp.ac.be/universite/services/save/streamlistsciences.html>

**Appendix 1:** Program of the workshop on paleo-climate related studies in East African Great Lakes (Friday 02/07/2004 at the Royal Museum for Central Africa)

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9h30 AM Welcome

9h40 AM Presentation by Tom Johnson (Large Lakes Observatory, University of Minnesota Duluth, USA). The Pulse of East African Climate since the Late Pleistocene: What Evidence for Impact by Oceanic and Solar Variability?

10h30 AM Presentation by Jean-Pierre Descy (Laboratoire d'Ecologie des Eaux Douces, Facultés Universitaires Notre-Dame de la Paix, Namur). Researches on climate variability as recorded in Lake Tanganyika (the CLIMLAKE project).

11h00 AM Coffee Break

11h15 AM Open discussion and possible collaborations

12h15 AM End of workshop

**Appendix 2:** Program of the BELLA session during the 10<sup>th</sup> International Paleolimnology Symposium: 25-29/06/06, Duluth, Minnesota, USA. Partial BELLA sponsoring indicated behind speakers names

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**Oral Session: EVALUATION OF BIOLOGICAL AND BIOCHEMICAL PROXIES**

- 9:15 Paleogenetics in Paleolimnology: Tracing Past Population-genetic Changes Using DNA Preserved in Cladoceran Resting Eggs  
*Joachim Mergeay*, Katholieke Universiteit Leuven, Belgium (BELLA)
- 9:30 Preserved DNA in Holocene Lake Sediments: A Window on Past Microbial Communities and Paleoenvironments  
*Marco Coolen*, Woods Hole Oceanographic Institution, USA (BELLA)
- 9:45 Linking the Present and the Past Using Chrysophyte DNA Sequences - New Perspectives for Cyst-Based Reconstructions  
*Christian Kamenik*, University of Bern, Switzerland
- 10:00 The Reconstruction of Past Changes in Ultraviolet Radiation Using Diatoms and Fossil Algal Pigments in Antarctic Lake Sediments  
*Elie Verleyen*, Ghent University, Belgium (BELLA)
- 10:45 Lake Circulation Inferred from High Resolution Modern Diatom Data  
*Sonja Hausmann*, Université Laval, Canada (BELLA)
- 11:00 Chironomidae (Insecta: Diptera) as Indicators for Past Climate Variation in African Lakes  
*Hilde Eggermont*, Ghent University, Belgium (BELLA)
- 11:15 Sexual reproduction in Chydorid Cladocera as a New Method to Study Past Climate Change: The State-of-the-Art  
*Kaarina Sarmaja-Korjonen*, University of Helsinki, Finland (BELLA)
- 11:30 Reconstructing Lake Productivity: Limitations, Progress and Future Requirements  
*John Anderson*, Loughborough University, UK (BELLA)
- 11:45 Multi-Proxy Approaches for Understanding Long-Term Ecosystem Dynamics in Pacific Salmon Lakes  
*Bruce Finney*, University of Alaska Fairbanks, USA (BELLA)

Lunch

- 1:45 Seabirds, Whales, and Salmon: Tracking the Effects of Marine-Derived Nutrients and Contaminants on Freshwater Ecosystems Using Paleolimnology  
*John Smol*, Queen's University, Canada
- 2:00 Caveats on the Use of Paleolimnology to Infer Pacific Salmon Returns  
*Will Hobbs*, University of Alberta, Canada
- 2:15 Towards Understanding Environmental Drivers of Pacific Salmon Production: Millennial-Scale Paleolimnological Evidence  
*Daniel Selbie*, Queen's University, Canada
- 2:30 Reconstructing Temperature Quantitatively in Lacustrine systems: Development and Application of the TEX86 Paleothermometer  
*Josef Werne*, University of Minnesota Duluth, USA
- 2:45 A 750-Year Molecular and Isotopic Record of Environmental Change from Lake Malawi, East Africa  
*Isla Castaneda*, University of Minnesota Duluth, USA

- 3:00 A 70-Year Record of Population Dynamics of a Freshwater Centric Diatom from Varved Sediments  
*Virginia Card*, Metropolitan State University, USA

**Poster Session: EVALUATION OF BIOLOGICAL AND BIOCHEMICAL PROXIES**

- A-1 Can We Trust Quantitative Palaeoenvironmental Reconstructions? Validation Using Redundancy Analysis with Constraints on Variables  
*Steve Juggins*, University of Newcastle
- A-2 Obtaining a Quantitative Number of Specimen from Sub-Samples by Means of Markers; An Example Using Chironomids  
*Gaute Velle*, University of Bergen
- A-3 Sub-fossil Diatoms as Indicators of Environmental Change in High-Latitude Lakes in Finnish Lapland from Pre-Industrial Times to Present Day  
*Sanna Sorvari*, University of Helsinki
- A-4 Tracking the Roles of Droughts and Watershed Activities on Water Quality in Boreal Plain Lakes of Alberta by Comparing Stratified and Polymictic Basins  
*Zofia Taranu*, McGill University
- A-5 Chironomids as Palaeoclimatic Indicators: A Palaeoecological and Biogeochemical Perspective  
*Frederike Verbruggen*, Utrecht University
- A-6 Holocene Temperature Reconstructions from Southern Greenland Lake Sediments Based on Midge Remains  
*Donna Francis*, University of Massachusetts
- A-7 An Inference Model for Mean Summer Temperatures during the Late Glacial Transition in the Southern Alps, New Zealand, Using Subfossil Chironomids  
*Ann Dieffenbacher-Krall*, University of Maine
- A-8 Historical Analysis of the Subfossil Chironomid Variability in Lakes under Natural Disturbances in the Boreal Forest of Quebec, Canada  
*Vicky Tremblay*, Institut National de la Recherche Scientifique
- A-9 Validation of Palaeotemperature Proxies in European Lakes  
*André Lotter*, Utrecht University
- A-10 Cladoceran Remains in Annually Laminated Sediment of Lake Vesijärvi Reflect Known Changes in Ambient Fish Density  
*Mirva Nykänen*, University of Helsinki
- A-11 Chaoborus as Indicators of Low Hypolimnetic Oxygen Concentrations in Calibration Sets and Down-Core Reconstructions  
*Roberto Quinlan*, York University
- A-12 Arcellaceans (Testate Amoebae) as Indicators of Mine Drainage in a Bay of Lake Retunen, Finland  
*Susanna Kihlman*, Geological Survey of Finland
- A-13 Crustacean Zooplankton Ehippia (Resting Eggs) as Indicators of Lake Calcium Concentration: A Pilot Project  
*Adam Jeziorski*, Queen's University
- A-14 The Diatom Paleolimnology Data Cooperative (DPDC): Status and Current Issues  
*Donald Charles*, Philadelphia Academy of Natural Sciences
- A-15 Applications of the New North American Non-Marine Ostracode Database: NANODE version 1: [www.kent.edu/NANODE](http://www.kent.edu/NANODE)  
*Alison Smith*, Kent State University





### **Appendix 3:** Presentations by BELLA members at EGU 2006

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Fagel N., Boës X. and Mackay A. (2006). Holocene and Eemian clay records in Lake Baikal: Weathering condition recovery during Interglacials. European Geosciences Union, 2-7 April, Vienna, Austria.

Loutre M.F., Boës X., Fagel N. and De Batist M. (2006). Climate control of varve thickness in Chilean lacustrine sediments during the last centuries: ENSO oscillations and solar activity. European Geosciences Union, 2-7 April, Vienna, Austria.

Boës X., Loutre M.F., De Batist M. and Fagel N. (2006). Inter-hemispheric Comparison of Mid-latitude Lacustrine Archives and High-latitude Ice Cores over the Younger Dryas and the Little Ice Age. European Geosciences Union, 2-7 April, Vienna, Austria.

Bertrand S., Sterken M., Lepoint G., Vyverman W. and Fagel N. (2006). Paleoclimate variability of Southern Chile during the last 17,900 yrs reconstructed by organic geochemical properties (C/N,  $\delta^{13}\text{C}$ ) of Lago Puyehue sediments (40°S). European Geosciences Union, 2-7 April, Vienna, Austria

#### Appendix 4: Program of the BELLA-supported session during EGU 2006

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### Oral Programme - SSP14/CL042 Lake systems: sedimentary archives of climate change and tectonics (co-organized by CL)

Convener: De Batist, M.








Co-Convener: Chapron, E., Loutre, M., Fagel, N.

Co-Sponsorship: Belgian Science Policy through the BELLA cluster project

#### Tuesday, 4 April 2006

Lecture Room: Lecture Room 27

Chairperson: DE BATIST, M. / FAGEL, N.

-  13:30 - EGU06-A-02933; SSP14/CL042-1TU3O-001  
13:45 **Trauth, M.H.**; Maslin, M.A.; Deino, A.; Strecker, M.R.  
A better climate for human evolution
-  13:45 - EGU06-A-08324; SSP14/CL042-1TU3O-002  
14:00 **Van Welden, A.**; Beck, C.; Reyss, J.-L.; Carrillo, E.; Bushati, S.; Koci, R.; Ollarves, R.;  
Jouanne, F.; Mugnier, J.-L.  
Sedimentary record of major historical earthquakes in the Shkodra Lake (Northern  
Albania): possible evidences from textural and radionuclides (210Pb, 137Cs) profiles.
-  14:00 - EGU06-A-06549; SSP14/CL042-1TU3O-003  
14:15 **Fanetti, D**; Vezzoli, L  
Interactions between the drainage basin and the lacustrine environment: evolution and  
sediment input of a delta system in the Lake Como (Italy)
-  14:15 - EGU06-A-06824; SSP14/CL042-1TU3O-004  
14:30 **Arnaud, F.**; Chapron, E.; Debret, M.; Revel-Rolland, M.; Desmet, M.; Thouveny, N.;  
Magny, M.; Marguet, A.  
Multidisciplinary fingerprinting of Holocene Rhone river detritism in Lake Bourget (NW  
Alps)
-  14:30 - EGU06-A-05872; SSP14/CL042-1TU3O-005  
14:45 **Blass, A.** ; Grosjean, M. ; Sturm, M.  
Quantitative high-resolution reconstruction of the Alpine climate since 1600 AD from  
varved Lake Silvaplana, eastern Swiss Alps: How stable are 20th century calibration  
models?
-  14:45 - EGU06-A-08796; SSP14/CL042-1TU3O-006  
15:00 **Schaber, K.**; Sirocko, F.  
Lithology, event and marker layers of late Pleistocene dry maar lakes, Eifel Germany
- 15:00 COFFEE BREAK
- Chairperson: CHAPRON, E. / LOUTRE, M.F.
-  15:30 - EGU06-A-06161; SSP14/CL042-1TU4O-001  
15:45 **Lamb, H**; Bates, R; Coombes, P; Marshall, M; Umer, M; Davies, S; Dejen, E  
Pleistocene desiccation of Lake Tana, the source of the Blue Nile

- 15:45 - EGU06-A-07191; SSP14/CL042-1TU4O-002  
16:00 **Abels, H.A.**; Abdul Aziz, H.; Calvo, J.P.  
Late Miocene lake-level fluctuations and phase-relation with orbital parameters: a sediment petrographic study of the Cascante del Rio section, Teruel Basin (NE Spain)
- 16:00 - EGU06-A-02587; SSP14/CL042-1TU4O-003  
16:15 **Moernaut, J.**; De Batist, M.; Charlet, F.; Chapron, E.; Heirman, K.; Pino, M.; Brummer, R.  
Holocene earthquake-triggered mass-wasting events recorded in the sediments of Lake Puyehue (South-Central Chile)
- 16:15 - EGU06-A-01174; SSP14/CL042-1TU4O-004  
16:30 **Roberts, S. J.**; Hodgson, D. A.; Bentley, M. J.; Smith, J. A.; Sanderson, D. C.; Carmichael, E.  
Chronology of a perennially ice-covered Antarctic lake and its relevance to subglacial lake studies
- 16:30 - EGU06-A-07721; SSP14/CL042-1TU4O-005  
16:45 **Donner, R.**; Demory, F.; Oberhänsli, H.; Witt, A.  
Climate Variability over the last Glacial Cycle recorded in Grain-Size Distributions of Lake Baikal
- 16:45 - EGU06-A-01050; SSP14/CL042-1TU4O-006  
17:00 **Fedorin, M.**; Fedotov, A.; Goldberg, E.; Zolotarev, K.; Saeva, O.; Grachev, M.  
800-kyrs history of paleogeographic changes in Asia imprinted in Lake Khubsugul bottom sediments and reconstructed from their geochemistry with resolution of < 50 years
- 17:00 END OF SESSION
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**Poster Programme - SSP14/CL042 Lake systems: sedimentary archives of climate change and tectonics (co-organized by CL)**

Convener: De Batist, M.

Co-Convener: Chapron, E., Loutre, M., Fagel, N.


Co-Sponsorship: Belgian Science Policy through the BELLA cluster project


**Author in Attendance: Thursday, 6 April 2006 17:30 - 19:00**













Display Time: Thursday, 6 April 2006 08:00 -  
Thursday, 6 April 2006 19:30

Poster Area: Hall A












Chairperson: DE BATIST, M. / CHAPRON, E. / FAGEL, N. / LOUTRE, M.F.

 A0438 EGU06-A-02960; SSP14/CL042-1TH5P-0438  
**Juninger, A.**; Mingram, J.; Bergner, A.; Trauth, M.  
High-resolution analysis of 16 kyr old laminated sediments from Lake Nakuru, Kenya (Poster)


 A0439 EGU06-A-02976; SSP14/CL042-1TH5P-0439  
**Knieß, U.**; Trauth, M. H.  
Combined hydrological model of adjacent holocene lakes in Central Kenya Rift (Poster)


-  A0440 EGU06-A-09254; SSP14/CL042-1TH5P-0440  
**Cárdenas, M.L.**; Moreno, P.I.; Villa- Martínez, R.  
Vegetation, fire, and climate during the Pleistocene-Holocene transition in SW Patagonia (51°S) (Poster) (**cancelled**)
-  A0441 EGU06-A-01158; SSP14/CL042-1TH5P-0441  
**Bertrand, S.**; Sterken, M.; Lepoint, G.; Vyverman, W.; Fagel, N.  
Paleoclimate variability of Southern Chile during the last 17,900 years reconstructed by organic geochemical properties (C/N, d13C) of Lago Puyehue sediments (40°S) (Poster)
-  A0442 EGU06-A-03881; SSP14/CL042-1TH5P-0442  
**Loutre, M.F.**; Boës, X.; Fagel, N.; De Batist, M.  
Climate control of varve thickness in Chilean lacustrine sediments during the last centuries: ENSO oscillations and solar activity (Poster)
-  A0443 EGU06-A-06329; SSP14/CL042-1TH5P-0443  
**Janssen, S.**; Fey, M.; Haberzettl, T.; Lücke, A.; Mayr, C.; Ohlendorf, C.; Schäbitz, F.; Wille, M.; Wulf, S.; Zolitschka, B.  
Holocene vegetation and climate changes reconstructed from lake sediments of the Laguna Azul (Santa Cruz Province, Southern Patagonia, Argentina) (Poster)
-  A0444 EGU06-A-00790; SSP14/CL042-1TH5P-0444  
**Daga, R.**; Ribeiro Guevara, S.; Sánchez, M.; Arribére, M.  
Geochemical analysis of recent tephra layers from a lacustrine sequence in Northern Patagonia Andean Range (Poster)
-  A0445 EGU06-A-01052; SSP14/CL042-1TH5P-0445  
**Fedorin, M.** ; Goldberg, E.  
Comparison of 400-kyr paleoclimatic record from Lake Baikal with records from Atlantics and Antarctica using new unified timescales (Poster)
-  A0446 EGU06-A-03518; SSP14/CL042-1TH5P-0446  
**Grygar, T.**; Bezdiëka, P.; Bláhová, A.; Hradil, D.; Kadlec, J.; Pruner, P.; Schnabl, P.; Oberhänsli, H.  
Clay minerals and iron oxides in Lake Baikal sediments: The last three glacial cycles in E Eurasia
-  A0447 EGU06-A-02795; SSP14/CL042-1TH5P-0447  
**Fagel, N.**; Boës, X.; Mackay, A.  
Holocene and Eemian clay records in Lake Baikal: weathering condition recovery during Interglacials (Poster)
-  A0448 EGU06-A-02479; SSP14/CL042-1TH5P-0448  
Chebykin, E.P.; Goldberg, Ye.L.; **Zhuchenko, N.A.**; Grachev, M.A.  
High-resolution record of uranium and thorium isotopes in Lake Baikal bottom sediments (Poster)
-  A0449 EGU06-A-05626; SSP14/CL042-1TH5P-0449  
**Cardinal, D.**; Alleman, L.Y.; Mackay, A.W.; Leng, M.J.; Morley, D.W.; André, L.  
Covariation of diatoms' oxygen and silicon isotopic signatures in a Holocene Lake Baikal sedimentary record (Poster)
-  A0450 EGU06-A-05719; SSP14/CL042-1TH5P-0450  
Khlystov, O.M.; Osipov, E.Y.; **De Batist, M.**; Hus, R.  
New evidence for important lake-level changes in Lake Baikal during the Last Glaciation (Poster)
-  A0451 EGU06-A-01053; SSP14/CL042-1TH5P-0451  
**Fedorin, M.** ; Vologina, E. ; Tolomeev, A.


Sediment accumulation rate, annual rhythms and geochemistry of bottom sediments from Lake Shira (Khakas) as a tool for paleoecological reconstructions (Poster)

-  A0452 EGU06-A-04060; SSP14/CL042-1TH5P-0452  
**De Grave, J.**; Buslov, M.; Zykin, V.; Van den haute, P.; Dehandschutter, B.; Delvaux, D.; De Batist, M.; Selegei, V.  
Intramontane lacustrine basins in the Siberian Altai: recorders of Cenozoic intracontinental tectonic and climatic events (Poster)
-  A0453 EGU06-A-01084; SSP14/CL042-1TH5P-0453  
**Buslov, M.**; De Grave, J.; Zykin, V.  
Cenozoic tectonics and climate of Central Asia (Poster)
-  A0454 EGU06-A-04354; SSP14/CL042-1TH5P-0454  
**Gier, S.**; Draganits, E.; Hofmann, C.-C.; Grasmann, B.; Schmid, H.P.  
Clay mineralogy of rock-avalanche-dammed lake sediments near Sangla (Baspas Valley) and Chango (Spiti Valley) in the Higher Himalaya, NW India (Poster)
-  A0455 EGU06-A-03847; SSP14/CL042-1TH5P-0455  
Demirel-Schlueter, F.; **Krastel, S.**; Demirbag, E.; Imren, C.; Toker, M.; Niessen, F.; Litt, T.; Sturm, M.  
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