PALCOMM INQUA PALAEOCLIMATE COMMISSION

newsletter

SEPTEMBER 2013

IMPRESSUM

Header	oceancolor.gsfc.nasa.gov
Content	Sandy P. Harrison, James Shulmeister, Jennifer Marlon, Ines Hessler and as indicated
PALCOMM Logo	Jennifer Marlon, Ines Hessler
Contact	Ines Hessler Macquarie University, North Ryde, NSW, Australia ines.hessler@mq.edu.au

perspectives

Late Quaternary paleoceanography of the western South Atlantic: recent achievements and future research directions

Cristiano M. Chiessi
University of São Paulo, Brazil
chiessi@usp.br

At the crossroads of key water masses and currents, the western South Atlantic has long being recognized as a region of great relevance for global climate. While the north and southward flowing North Brazil Current (NBC) and Brazil Current (BC), respectively, dominate its tropical surface hydrography, the northward flowing Malvinas (Falklands) Current (MC) controls the subtropical sector of the western South Atlantic.

Starting at around 10oS, both the NBC and the BC originate from the South Equatorial Current (SEC) (Peterson and Stramma, 1991). Surface and thermocline conditions at the western tropical South Atlantic are linked to the seasonal variability in trade wind intensity and the position of the Intertropical Convergence Zone (ITCZ) (Hastenrath and Merle, 1987). The NBC is an important element for the meridional heat distribution in the Atlantic and a key component of the Atlantic meridional overturning circulation (AMOC) (Broecker, 1991).

At its origin, the BC is a relatively weak western boundary current (Peterson and Stramma, 1991). While the NBC receives about 12 Sv (1 Sv = 106 m3 s-1) from the SEC, the BC receives only about 4 Sv. This is probably related to the AMOC, which enhances the NBC and diminishes the BC transport (Broecker, 1991).

Around 38oS the BC encounters the MC, which originates as a branch of the Antarctic Circumpolar Current east of the Drake Passage and transports subantarctic waters along the Argentinean continental shelf (Peterson and Stramma, 1991). The encounter of these two currents (i.e., the Brazil-Malvinas Confluence) not only generates one of the most energetic regions of the world ocean but also a major ventilation area for much of the South Atlantic thermocline (Boddem and Schlitzer, 1995; Gordon, 1981). After having come into contact, the BC and the MC turn southeastward and flow offshore forming the South Atlantic Current.

Below the permanent thermocline, the western South Atlantic is filled by southern and northern sourced water masses (from top to bottom) (Stramma and England, 1999): (i) two northward flowing water masses, i.e., Antarctic Intermediate Water (AAIW) between ca. 500 and 1000 m water depth, and Upper Circumpolar Deep Water between ca. 1000 and 1400 m water depth; (ii) southward flowing North Atlantic Deep Water (NADW) between ca. 2000 and 3000 m water depth; (iii) and two northward flowing water masses, namely Lower Circumpolar Deep Water between ca. 3000 and 3500 m water depth, and Antarctic Bottom Water present between ca. 3500 m water depth and the bottom of the ocean. NADW forms the deep branch from the AMOC that balances the surface northward flow in the Atlantic Ocean (Broecker, 1991).

Despite its great relevance for global climate, the frequency of late Quaternary paleoceanographic studies dealing with the western South Atlantic only recently experienced a marked increase, e.g., (Arz et al., 1998, 1999; Bender et al., 2013; Came et al., 2003; Carlson et al., 2008; Chiessi et al., 2009; Chiessi et al., 2008; Curry and Oppo, 2005; Gyllencreutz et al., 2010; Hendry et al., 2012; Laprida et al., 2011; Lynch-Stieglitz et al., 2006; Mahiques et al., 2002; Mahiques et al., 2011; Mahiques et al., 2009; Makou et al., 2010; Maslin and Burns, 2000; Pivel et al., 2013; Razik et al., 2013; Santos et al.; Souto et al., 2011; Tessin and Lund, 2013; Toledo et al., 2007; Voigt et al., 2013; Weldeab et al., 2006). Far from being a thorough compilation of all published studies, the list above highlights the recent increase in the interest of the paleoceanographic community to the western South Atlantic.

Although the number and temporal resolution of the available studies are still low if compared to the striking diversity of water masses and currents, a few changes in ocean circulation for the Last Glacial Maximum (LGM), the last deglaciation and the Holocene seem to be robust features. These include: (i) an increase in terrigenous input to the continental margin off NE Brazil and in nutrient content of AAIW during millennial-scale slowdown events of the AMOC from Marine Isotope Stages (MIS) 3 and 2; (ii) a shoaling of the interface between intermediate and deep water masses during the LGM that was related to an AMOC that was neither significantly stronger nor significantly weaker than its modern strength; (iii) an apparent warming of the sea surface temperatures of the South Atlantic during periods of decreased strength of the AMOC of the last deglaciation; (iv) an anomalous northward penetration of subantarctic water masses and Patagonian sediments over the southern Brazilian upper continental margin between ca. 8 and 5 cal ka BP; and (v) the establishment of the present circulation pattern at ca. 5 cal ka BP.

Notwithstanding the recent achievements, many questions remain to be answered, such as: (i) How did the upper and deep-water column stratification of the western South Atlantic evolved during abrupt climate change events? (ii) What was the influence of changes in the Agulhas leakage over the upper water column of the western South Atlantic during MIS3-1? (iii) Was there a partitioning of heat and salt at the bifurcation of the SEC generating an anti-phase behavior of the NBC and the BC during abrupt climate change events? (iv) Did the Brazil-Malvinas Confluence migrate meridionally during MIS3-1? (ii) What were the impact that changes in the upper water column of the western South Atlantic produced over the hydroclimate of the adjacent continent?

The recent interest on the paleoceanography of the western South Atlantic may help to tackle these questions. Here a multidisciplinary approach that encompasses different proxies and numerical modeling efforts would be paramount. Brazil is setting the stage to give its contribution. As the federal government turned its eyes to the Amazônia Azul (or Blue Amazon, as the western South Atlantic is sometimes referred to in official governmental documents), it not only created an entire new research center devoted to oceanographic research (Instituto Nacional de Pesquisas Oceanográficas e Hidroviárias) but is also buying a ca. 80 m long new research vessel. Together with other initiatives undertaken by neighboring countries and international research programs (e.g., the INQUA-PAGES LaACER initiative, the possibility of having RV Joides Resolution drilling in the western South Atlantic) we will most probably be hearing more about the western South Atlantic in the near future!

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palcomm workshop reports

Report on the African Phytolith Working Group Workshop

BPI Palaeontology, University of the Witwatersrand Johannesburg. 25-26 March 2013.

Prof Marion Bamford
University of the Witwatersrand, Johannesburg, South Africa
Marion.bamford@wits.ac.za

Funding: INQUA Project No 1213 (Palcomm) and BPI Palaeontology

1. Objectives

To bring together scientists and post graduate students working on African phytoliths

To discuss common basic issues such as extraction methods, modern reference collections, taphonomy, nomenclature and to establish a database.

To discuss current projects and future projects and collaborations, in particular how phytolith research can be used for local and regional climate, climate change and fire history.

2. Participants

- Prof Marion Bamford, BPI Palaeontology, University of the Witwatersrand, Johannesburg, South Africa, PI Researcher
- Ms Irené Esteban Alama, Department of Archaeology and Pre-History, University of Barcelona, Spain, PhD student
- Ms Tanya Hattingh, Archaeology Department, University of the Witwatersrand, Johannesburg, South Africa, MSc student
- Ms Rahab Kinyanjui, Palynology Department, National Museum of Kenya, Nairobi AND BPI Palaeontology, University of the Witwatersrand, Johannesburg, South Africa, PhD student
- Prof Julius Bunny Lejju, Associate Dean, Faculty of Science, Mbarara University of Science , Mbarara, Uganda, Researcher
- Ms May Murungi, Mbarara University of Science Mbarara, Uganda AND BPI Palaeontology, University of the Witwatersrand, Johannesburg, South Africa, PhD student
- Mr Edward Odes, BPI Palaeontology, University of the Witwatersrand, Johannesburg, South Africa, MSc student
- Mr Moshood Olayiwola, Obafemi Awolowo University, Ile-Ife, Nigeria AND BPI Palaeontology, University of the Witwatersrand, Johannesburg, South Africa, PhD student
- Dr Caroline Phillips, Primate Ecology, University of Cambridge AND BPI Palaeontology, University of the Witwatersrand, Johannesburg, South Africa, Post doctoral fellow
- Dr Lloyd Rossouw, Archaeology, National Museum, Bloemfontein, South Africa, Researcher

3. Topics discussed

3.1 Extraction techniques

Various techniques for the extraction of phytoliths from modern plants, modern soils and archaeological soils or palaeontological sediments were discussed. Most people use Sodium poly tungstate for heavy liquid separation (specific gravity 2.4) but it is expensive so they recycle it once and reuse it. It I allowed to stand until a useful quantity has accumulated then filtered three times then reused. A summary of the recommended techniques is given below.

Dry ashing of modern reference material – especially monocots (Lloyd):

Cut a leaf, stem or inflorescence to fit beneath a coverslip on a slide. Mark the slide with a diamond tip pen. Place slides in the furnace and burn at 450 to 500°C for six hours. When cool rub the coverslip over the slide gently to break up the residue. This method is quick and often articulated phytoliths are visible. Mount in glycerine jelly as this can be heated to make it less viscous so the slide can be tapped and the phytoliths can rotate. This si not a permanent slide but lasts a few years at least.

Wet ashing produces cleaner slides but it takes much longer.

Wet ashing of modern reference material - for dicots:

The usual method of ashing dried, crushed plant material in a crucible for several hours and then cleaning by adding dilute HCl or other acids was recommended.

Modern soils, archaeological and palaeontological sediments

The popular method of disaggregation of clays with either liquid soap-agitation-settling and repeating OR adding NH4OH and then heavy liquid separation with sodium polytungstate, dilute HCl and many washings and spinnings, which takes a long time, can be greatly speeded up by using the Katz et al. (2010) method. Irené said the Barcelona University lab uses only this method and makes temporary slides. After further discussion we established that you can make permanent slides.

Katz et al. (2010; JAS 37(7), 1557-1563) method – takes about 2 hours instead of two weeks:

Sieve the sediment to remove the fraction larger than 0.5mm

Accurately weigh between 20 – 50 mg of this sediment and put in an Eppindorf tube (0030 121.023)

Add 50 microlitres (µl) of 6 N HCl with an adjustable pipette

Wait for bubbling to finish then add 450 µl of 2.4g/ml solution of sodium polytungstate.

Vortex for about 3 seconds

Sonicate for about 10 mins

Vortex again

Centrifuge for 10 mins at 5000 rpm so debris form a pellet at the bottom and phytoliths remain in suspension.

Immediately remove 50 µl of supernatant and place on a slide and cover with a 24x24 mm coverslip. This amount fills the area evenly and homogeneously and represents 10% of the original amount processed so can be accurately counted.

(See paper for more information.)

The rest of the supernatant can be put into another Eppindorf tube, washed and centrifuged and kept for making permanent slides but quantification is no longer possible.

Clay-rich samples: the sonication usually removes the clays.

Charcoal-rich samples – first remove excess charcoal by adding H2O2

3.2 Counting and Quantifying Phytoliths

People use a number of methods and we decided that it cannot be standardized because it depends on the material the abundance of phytoliths and the project objectives. However it was recommended that the method used be clearly explained so t can be repeated or compared with other methods.

Examples:

Add Lycopodium spores to the sample of known weight. Count 300 0f them and however many phytoliths are included.

No Lycopodium - Count a minimum of 200-300 short cells.

Rosa – weighted samples – count minimum of 200 phytoliths and calculate the %AIF, etc.

3.3 Modern reference collections of phytoliths

We agreed it was very important to spend time enlarging the collections but it is seldom possible to get dedicated funding so this activity has to be tacked onto other projects. Recommend collecting at every opportunity and extracting and analyzing when possible.

Existing collections in Africa:

Lloyd – National Museum in Bloemfontein: has about 300 species of grasses

Rahab – National Museum of Kenya in Nairobi: has collected by altitude and has about 60 grasses and 54 dicots.

Julius and May – Mbabara University in Uganda: have a small collection of high altitude plants and some from around Lake Victoria.

Irene and Rosa – University of Barcelona: have a collection from Tanzania (Olduvai Gorge, Ngorongoro Crater, Lemagrut, Lake Eyasi, Lake Manyara, Serengeti) and the Eastern Cape Fynbos near Mossel Bay.

Marion – BPI Palaeontology: has samples from Koobi Fora (Kenya), KwaZulu Natal and various other sites but the slides are poor.

Ultimately we would like to have a large collection of plants and slides housed in the various laboratories and all the data added to an electronic database that we can access and update. The database would need an IT specialist to set up and maintain but we can collect plants and make slides as we go along. We should collect plenty of fresh material so that voucher specimens can be kept for future validation of taxa where necessary and so that exchanges can be made. Recommendations for collection data:

Taxonomy: Family, Genus and species

Location: country, region, farm, GPS co-ordinates; altitude

Habit: tree, shrub, liana, herb, geophytes, aquatic, etc.

Habitat: mountain, lowland, swamp, rocky outcrop, etc

Associated vegetation: forest, woodland, grassland, etc., and dominant taxa

Collector, date, place where housed

Processed/analysed for phytoliths – date

3.4 Taphonomy

We briefly discussed the transport, weathering and destruction of phytoliths. Sometimes phytoliths are broken and not easy to recognize. Chemical weathering and partial dissolution can often be recognized. FTIR is useful for looking at the mineral composition of the sediments and phytolith fraction. It can also be used to characterize the clay fraction. More studies need to be done to determine how far phytoliths are transported – usually not as far as pollen grains so they can give a local or extra-local signal rather than a regional one.

3.5 Fire

A colour change is detectable in some

phytoliths that have been heated but high temperatures are needed and these usually are greater than wild fires.

3.6 Nomenclature

It was agreed that nomenclature proposed by Madella et al. (2005) was useful but needed updating. Also, it does not really describe the 3-D features of phytolith morphotypes. We recommended using his system but carefully describing or illustrating other terms that we used. Another suggestion for the reference material was to include a short video clip of phytoliths rotating so that all features could be seen.

3.7 Various indices

The bulliform index of Raymonde Bonnefille for moisture only works for locally wet patches within a dry environment so care must be used when applying this index.

The aridity index of Bremond/Barboni/Bonnefille does not work for high altitude sites with high evapotranspiration.

4. Presentations and Current Research projects

Irene Esteban presented her PhD research on the phytoliths from Pinnacle Point

Authors: Esteban, I., Cabanes, D., Albert, R.M.

Title: Phytoliths as a tool to identify the exploitation of vegetal resources and reconstruct the vegetation of Pinnacle Point 5/6 (Mossel Bay) during early Homo sapiens occupation.

Phytoliths are being used to reconstruct the vegetation at Pinnacle Point 5/6 (Mossel Bay) during the occupation of early Homo sapiens (~100 ka). This work takes into account the results obtained from the study of the archaeological samples and their comparison to modern soils and plants from the area (Cape Floral region). Our main goals lie in improving our understanding on the exploitation of vegetal resources by the first modern humans, with special emphasis on the use and control of fire. The taphonomic processes affecting phytolith preservation in both archaeological and modern soil samples play also an important role in this work for a more reliable interpretation.

Caroline Phillips presented the PhD research work that she did at Cambridge University:

She used various methods to identify the diet of chimpanzees: isotopes and phytoliths from the faecal matter but these did not always correlate with the observed foods eaten by the chimps. For her post doctoral research she is monitoring chimps in the wild and in captivity and the local vegetation and soils. This comparative information will help in answering the questions on how species can change their home ranges and diets and will be applied to fossil samples from Koobi Fora.

Lloyd Rossouw's research emphasis is on grass systematics and the morphometrics of their phytoliths. He is working at the tribal level and trying to separate the taxa. His reference material includes a variety of grasses and he is expanding to include restios. He also looks at archaeological and palaeontological samples to determine the past vegetation.

May Murungi's MSc project was on phytoliths from an alpine site in the Virunga volcanic region of Uganda and looking at the impact of climate on vegetation. This high diversity hotspot is sensitive to climate change and has had minimal impact by humans. For her PhD she will analyse the phytoliths from Sibudu rock shelter in KwaZulu Natal and compare her results with the other botanical data (Middle Stone Age: 77 – 38 ka).

Rahab Kinyanjui's Masters was on the phytoliths from Olorgesailie and reconstructing the vegetation related of the mid to Late Pleistocene. She made a reference collection from the region that was along an altitudinal gradient. For her PhD she will compare the phytoliths and reconstructed vegetation from Olorgesailie (new core) with that from Koobi Fora in the East of Lake Turkana

Eddie Odes presented his Mc research on the search for and extraction of phytoliths from dental calculus of the hominid fossils from Sterkfontein, around 2.3 Ma. Abundance was low but showed a varied diet from the few specimens that had preserved calculus.

Julius Lejju presented a talk on the research that has been done in Uganda by him and his students looking at the impact of humans and climate on the vegetation over the last 2000 years.

Marion Bamford spoke very briefly on the research at Olduvai Gorge where she and Rosa Albert are looking at the past vegetation using phytoliths and macroplant fossils (1.8-1.7 Ma). They find that the soil type affects preservation and that the two sources of information are biased towards different vegetation types.

5. Future projects and collaborations

5.1 Reference material

We will each make concerted efforts, related to projects and available funding, to expand and photograph reference material. Sufficient plant material should also be collected for exchange purposes. Ultimately we will seek funds and IT expertise to make a web database.

Recommendations for required information for the collection data:

Taxonomy: Family, Genus and species

Location: country, region, farm, GPS co-ordinates; altitude

Habit: tree, shrub, liana, herb, geophytes, aquatic, etc.

Habitat: mountain, lowland, swamp, rocky outcrop, etc

Associated vegetation: forest, woodland, grassland, etc., and dominant taxa

Collector, date, place where housed

Processed/analysed for phytoliths – date

Material available for exchange: yes/no

5.2 Phytolith productivity

We recommend that researchers try to establish the relative productivity of phytoliths per plant type and part. One method is the weighing and calculations of Albert et al., 1999. This will help in interpreting the archaeological and fossil samples.

5.3 Standardised counting of phytoliths in samples

This is probably an impossible task so we recommend that researchers keep their raw data and describe their methods carefully so that samples can be meaningfully compared.

5.4 Application of phytoliths to fire history and global vegetation changes

We still need to do some background research on methods and data required but will bear this in mind as we continue with our projects.

5.5 Meetings

We will endeavour to meet again at the East African EAQUA and EAAPP conferences (Kenya, July 2013) and SASQUA conference (Botswana, 2014) for the next phase and eventually hold our own dedicated conference with a greater number of participants.

Some oft he delegates at the workshop

LaACER II Workshop. Latin American Abrupt Climate Changes and Environmental Responses

Natal, Rio Grande do Norte, Brazil

Dunia H. Urrego
University of Exeter, UK
D.Urrego@exeter.ac.uk

In the framework of LaACER -Latin American Abrupt Climate Changes and Environmental Responses- Dunia H. Urrego (University of Bordeaux, France) and Francisco W. da Cruz (University of Sao Paulo, Brazil) organized the 2nd workshop on Millennial-scale climate variability during the last glacial in the American tropics and subtropics. The workshop took place between 4th and 8th August 2013 and was sponsored by Past Global Changes (PAGES), the Brazilian Science Foundation (CNPq) and INQUA.

The main scientific objective of LaACER is to understand the environmental signature of abrupt climate events as Dansgaard–Oeschger warmings, Heinrich Stadials, the Younger Dryas, and the 8.2k event in the American tropics and subtropics. The specific goals of the second workshop were to foster capacity building in Latin-America, strengthen synergies between ocean, terrestrial and modeling communities, and promote scientific deliberation on abrupt climate changes.

LaACER II attracted 33 paleoclimatologists, 70% of which were from Latin-American countries, and 60% early-career and PhD scientists. Twenty-five talks and seven posters of high-quality and mostly-unpublished data were delivered within four sessions on atmospheric, environmental, and oceanic records of millennial-scale climate variability, and on climate patterns over the last millennia. A final program can be accessed from: http://ephe-paleoclimat.com/acer/LaACER_II.htm. Break-out sessions and discussions assessed chronology of events, comparability and ways to integrate records of abrupt climate events. The workshop ended with a field trip to sand

dunes and lakes in Touros, near the easternmost tip of South America. Abdelfettah Sifeddine (IRD, France) and Francisco W. da Cruz led the field trip and explained their recent work in the area.

Participants

James Apaestegui, Paul Baker, Eline Barreto, Juan Pablo Bernal, Maria Gracia Bustamante, Marília C. Campos, Cristiano Chiessi, Renato Cordeiro, Francisco W. da Cruz, Guaria Cardenés, Johan Eternou, Suzette Flantua, Henry Hooghiemstra, Lucas Inglez, Vinícius Mendes, Christian Millo, Jean-Sebastien Moquet, Bárbara Moura de Carvalho, Julio Pavón-Moreno, Valdir Novello, Mitchell Power, Tilmann Schwenk, Abdelfettah Sifeddine, Gyrlene Silva, Luciane Silva Moreira, Oscar Rama-Corredor, Veronica Ramirez Ruiz, Nicolás Strikis, Mauro de Toledo, Dunia H. Urrego, Giselle Utida, Hong Wang, André Zular.

Delegates at the LaACER workshop

palcomm related workshops

UPDATE: INQUA 2013 Early Career Researcher Inter-congress meeting: 2nd–6th December, 2013 file://localhost/(http/::www.inqua.org:ecrMeetings.html)

1. Reminder INQUA 2013 Early Career Researcher Inter-congress meeting: 2nd–6th December, 2013, Wollongong, New South Wales, Australia
2. Quaternary International Special Issue
3. INQUA ECR Inter-congress meeting travel awards

1. INQUA 2013 Early Career Researcher Inter-congress meeting: 2nd - 6th December, 2013, Wollongong, New South Wales, Australia
for MSc, PhD Candidates and Early Career Researchers
The International Union for Quaternary Research (INQUA) is committed to developing the next generation of Quaternary Scientists. The INQUA Executive Committee has approved the inaugural INQUA Early Career Researcher inter-congress meeting to provide an avenue for MSc/PhD candidates, Post-Doctoral Researchers and research-active academics in the early stage of their careers (within 5 years of obtaining their PhD) to attend valuable workshops designed to assist ECRs with career development, to present their science and gain invaluable mentoring from more senior scientists.

Please see attachment for more details.
To register:
https://www.conferenceonline.com/index.cfm?page=booking&object=conference&id=17714&categorykey=B5EAEFDA-A737-4940-977E-00E69D21036A&clear=1
We have also established the "Inqua Early Career Researcher Page" on Facebook

which will also be posting updates for the meeting

2. As part of the INQUA 2013 Early Career Researcher Inter-congress meeting: 2nd– 6th December, 2013 Quaternary International has kindly agreed to run a special issue for ECRs. The aim is for ECRs (MSc/PhD candidates, Post-Doctoral Researchers and research-active academics within 5 years of obtaining their PhD) to either be the primary or single author with manuscripts that are at an advanced stage and ready for submission to the QI editorial process (see attached document for details on how to submit to the Special Issue).

Submissions associated with the commission themes and associated INQUA projects are welcome (http/::www.inqua.org:commissions.html).
- Coastal and marine processes [CMP]
- Palaeoclimate [PALCOMM]
- Humans and Biosphere [HaBCom]
- Stratigraphy and Chronology [SACCOM]
- Terrestrial Processes, Deposits and History [TERPRO]

Submissions need to be at the required standard for publication in QI and will undergo the normal QI editorial process. The aim is to have manuscripts submitted before the meeting in December and followed up with writing workshops at the ECR meeting to assist in addressing reviewer's comments and further developing the manuscripts.

If you have any questions or would like to discuss a submission please contact the Guest Editors of this special Issue Dr. Craig R. Sloss (c.sloss@qut.edu.au) or Dr. Lynda Petherick (mlynda.petherick@qut.edu.au)

3. The INQUA ECR meeting has a limited number of travel awards available for those giving an oral presentation and intending to publish in the QI Special Issue. For international attendees this amounts to (AU $1000) and for Australasian attendees this amounts to AU $500). Unfortunately we will not be able to fund all applicants. Please use the application form attached and returns to c.sloss@qut.edu.au.

Closing date for applications: September 11, 2013. Recipients will be informed of the outcome buy the end of September.

For questions relating to the meeting contact Sam Marx (msmarx@uow.edu.au). For questions related to the Special Issue and Travel Awards contact Dr Craig Sloss (mc.sloss@qut.edu.au)

INTIMATE - INTegrating Ice core, MArine, and TErrestrial records

The objective of INTIMATE is to reconstruct past abrupt and extreme climate changes over the period 60,000 to 8000 years ago, by facilitating INTegration of Ice core, MArine, and TErrestrial palaeoclimate records and using the combined data in climate models to better understand the mechanisms and impact of change, thereby reducing the uncertainty of future prediction.
Funded as COST Action ES0907, a lot is going on in INTIMATE this fall. Events are announced at http://cost-es0907.geoenvi.org/activities/intimate-events.

Workshop on climate impacts on sedimentary environments
Utrecht (The Netherlands), 30 September - 1 October 2013
Contact Wim Hoek (w.hoek@geo.uu.nl)

Workshop on climate records in the Alpine region 8-60 ka BP
Innsbruck (Austria), 3-7 October 2013 with optional field trip October 8-9
http://cost-es0907.geoenvi.org/activities/intimate-events/910-upcomming/102-2013-10-alpine-quaternary-workshop-

Into and Out of the LGM on the Northern Alpine Forelands: Integrating Cosmogenic Nuclide and radiocarbon Data.
Burgdorf, Canton of Bern (Switzerland), November/December 2013
No call for participants has been made yet, but check the web address above or contact Irka Hajdas (hajdas@phys.ethz.ch)

Model-data integration over the last deglaciation, focused on water isotopes
Paris (France), Time TBA
No call for participants has been made yet, but check the web address above or contact Didier Roche (Didier.Roche@lsce.ipsl.fr)

INTIMATE also co-funds a meeting with CELL-50k, contact Simon Blockley (simon.blockley@rhul.ac.uk)

The Anthropocene Review

The Anthropocene Review, a trans-disciplinary journal issued 3 times per year, brings together peer-reviewed articles on all aspects of research pertaining to the Anthropocene, from earth and environmental sciences, social sciences, material sciences, and humanities. High impact research articles, authoritative and stimulating reviews, and brief 'perspective' articles are especially welcome. Its overall aim is to communicate clearly and across a wide range of disciplines and interests, the causes, history, nature and implications of a world in which human activities are integral to the functioning of the Earth System.

The Anthropocene Review is the first high profile international journal to address explicitly all aspects of the Anthropocene, from earth and environmental sciences, material sciences, social sciences and the humanities. Its overall aim is to communicate clearly and across a wide range of disciplines and interests, the causes, history, nature and implications of a world in which human activities are integral to the functioning of the Earth System.

Submit

If you would like to submit a manuscript, The Anthropocene Review uses the ScholarOne system so please visit our SAGEtrack website. For manuscript submission guidelines please visit our blog.

If you would like to discuss your paper prior to submission please contact the editor, Frank Oldfield at: oldfield.f@gmail.com

Those interested in posting blogs or developing podcasts should contact Frank Oldfield or Dan Schillereff.

View first editorial here.

The first full issue of The Anthropocene Review will be available in April 2014.

upcoming conferences and workshops

October

Paleofire data synthesis using R: A Global Paleofire Working Group (GPWG) workshop
02.-06.10.13
Basancon, France
www.gpwg.org

2013 Geological Society of America Annual Meeting & Exposition
27.-30.10.13
Denver, USA
http://community.geosociety.org/2013AnnualMeeting/Home

November

International Conference On Regional Climate - Cordex 2013
04.-07.11.13
Brussels, Belgium
http://cordex2013.wcrp-climate.org

Imaging the Past to Imagine our Future - The International Continental Scientific Drilling Program's Science Conference
11.-14.11.13
Potsdam, Germany
http://www.icdp-online.org/front_content.php?idart=3642

Geosciences 2013 Conference, Geoscience Society of New Zealand
24.-27.11.13
Christchurch, New Zealand
http://www.cvent.com/events/geosciences-2013-conference/event-summary-5cb5c6cf843848df87f293052ac744e0.aspx

December

Inaugural INQUA Early Career Researcher Inter-Congress Meeting
02.-06.12.13
Wollongong, Australia

PMIP Ocean Workshop 2013 - Understanding Changes Since the Last Glacial Maximum
04.-06.12.13
Corvallis, USA
http://people.oregonstate.edu/~schmita2/Projects/PMIP_LGM_C13/PMIP_ocean_WS.html

AGU Fall meeting
09.-13.12.13
San Fransico, USA
http://fallmeeting.agu.org/2013/

For futher conferences see http://www.pages-igbp.org/calendar/