IAS

INTERNATIONAL ASSOCIATION OF SEDIMENTOLOGISTS

Newsletter

October 2010 | http://www.iasnet.org | N° 230

Contents

IAS Bureau and Council

News from the Editors of Sedimentology

The Editors of Sedimentology request proposals for special issues of the journal to be published in 2013 and 2014. The special issues will be published as the January issue in each year and will be a collection dedicated to a specific theme.

The theme and papers should have high impact and are designed to increase the visibility of the journal. An example of a special theme issue was the Mediterranean issue published in January 2009.

The time table for preparing special issues is that a proposal should be submitted to the editors by October 2010 would be ready for publication in January of 2013. The proposal will be submitted to the Fall meeting of the Bureau of IAS. A proposal should provide a theme, a possible list of papers, and names of the guest editors. The guest editors will be responsible for the scientific content of the issue. The Editors of Sedimentology will serve as the final editors for the issue to ensure the papers meets journal standards.

Please send your proposal either to Peter K. Swart (pswart@rsmas.miami.edu) or Steve Rice (s.rice@lboro.ac.uk).

Report

Norwegian Petroleum Society Conference «From Depositional Systems to Sedimentary Successions on the Norwegian Continental Shelf»

Stavanger, Norway, 4–6 May, 2010

Under the auspices of the Norwegian Petroleum Society (NPS), a three-day conference was organised on the sedimentology and stratigraphy of the Norwegian Continental Shelf (NCS). The conference was sponsored by 8 oil industry companies and was held in Stavanger, the oil industry centre of Norway. Stavanger has an international airport and is a convenient location, being easily accessible for many companies based in Norway. Almost 300 professionals attended the conference on behalf of 64 different companies and 15 universities. Most of the attendees represented Norwegian universities or Norwegian based company subsidaries dealing with the NCS.

The NCS (Fig. 1) stretches from the North Sea in the south to the Barents Sea in the north, a distance of 2500 km, and includes hydrocarbon plays ranging from Devonian to Pleistocene in age. Reservoir types vary from alluvial floodplains to deepwater fans, in almost every climate zone from arid through humid to glacial, in tectonic settings ranging from intra-montane through compressional/ transpressional to extensional/ transtensional basins, and passive margins.

The conference offered oral and poster sessions as well as three workshops on 1) virtual outcrop geology, 2) seismic stratigraphic interpretation and the application of dedicated software, and 3) stratigraphic and process-based numerical modeling. A widely appreciated aspect of the conference was the inclusion of a core workshop featuring examples of many important reservoirs from the NCS. This conference continued the tradition of a series of conferences organized over the last 20 years by the Norwegian Petroleum Society in the field of petroleum related

geology. A significant number of these conferences focused on sedimentology and sequence stratigraphy. Proceedings have traditionally been published by Elsevier, however the proceedings of this conference are planned to be published by the IAS.

The initial focus of sequence stratigraphy on eustasy as the key control on depositional architecture has evolved to encompass tectonic, climatic and geomorphologic controls on sediment delivery from source to sink and preserved stratal architecture. Therefore, the main aim of the conference was to present new advances in our understanding of these issues and their impact on stratigraphic architecture and petroleum exploration offshore Norway. A mixture of studies ranging from more conceptual work based on subsurface and/or outcrop data, to experimental and/or numerical modelling studies and studies using subsurface data alone to interpret ancient sedimentary successions were presented.

A key element during the conference was, firstly, to show how the variety of these studies, using a wide spectrum of data sources (outcrop, experimental, numerical, and subsurface), can and should be combined to advance our understanding of the NCS and indeed other areas. Secondly, the aim was to illustrate the current focus on integration of academic research work with the efforts and studies of the oil industry. With remaining hydrocarbon volumes stored in increasingly more challenging existing fields as well as in complex, and often smaller, reservoirs,

Figure 1. The Norwegian Continental Shelf with some of the larger hydrocarbon fields

integration of data sets, techniques and concepts is crucial to locating and targeting these accumulations and their subsequent development. New sedimentological concepts can also influence the exploration of stratigraphic traps that have been previously overlooked. The conference organisers intended to encourage the inclusion of presentations that showed how scientific insights and concepts can be translated into applicable exploration and development concepts by the hydrocarbon industry.

Consequently, the conference was organized around three main sections:

I - The impact of tectonics on depositional systems and successions

II - The impact of climate on depositional systems and successions

III - Autogenic processes and products - learnings from numerical modelling

Each morning and afternoon session opened with a key note talk. Special attention was given to the integration of both analogue studies and processed based models with the insights gained from the interpretation and visualization of high quality subsurface case studies.

Part 1 focused on tectonic impacts on depositional systems. Papers dealt with stratal development as a function of hinterland evolution and basin tectonics including salt movements. Norwegian sector studies included Jurassic sequences in the Central North Sea, South Viking Graben and Northern North Sea, as well as younger deep marine systems from the Vøring Basin and the Dønna Terrace. Outcrop analogues were presented from the Albian slope/apron system of Northern Spain.

Part 2 took climatic impacts as a theme. Key note talks focused on passive margins stratigraphic development. Norwegian offshore examples showed the impact of climatic change from the Triassic to the Cenozoic and included both clastic and carbonate systems. Several papers on the Chalk demonstrated a renewal of interest in the sedimentology of one of Norway's most productive hydrocarbon reservoir types. New ideas were generated by papers dealing with examples from the Czech Republic, Oregon and France.

Part 3 focused on the subject of autogenic processes and learnings from stratigraphic modelling. The role of autostratigraphy in fluvial, deltaic and shallow marine systems was considered in key talks, and in case studies from the Brent Group and the Rhine Delta. Autogenic processes in deep marine settings were also explored with both modeling studies and a North Sea

example. Additionally, the interaction between tectonic, climatic, eustatic, and autogenic controls were given. Sequence stratigraphic examples from the Barents Sea and the North Viking Graben were presented.

The conference was timely, well-received and successful, and the NPS will continue the series of petroleum related geology conferences.

Allard W. Martinius
Statoil
Trondheim, Norway
E-mail: awma@statoil.com

Report

Deep-water Circulation: Processes & Products

Baiona, Pontevedra, Spain 16-18 June, 2010

The international congress on «**Deep-water Circulation: Processes & Products**» took place in the Parador Conde de Gondomar, Baiona (Pontevedra, Spain) from 16-18 June, 2010 (Fig. 1, http://www.facultadeccdomar.es/contourites). It was organised with wide European and global support and convened many of the principal specialists in the field.

The organising organisations were Universidad de Vigo (Spain), Heriot Watt University (UK), Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS, Italy), Instituto Geológico y Minero de España (IGME, Spain), Renard Centre of Marine Geology, Ghent University (Belgium), Instituto Español de Oceanografía (IEO, Spain), Laboratorio Nacional de Energia e Geologia (LNEG, Portugal), Consejo Superior de Investigaciones Científicas (CSIC, Spain), an the Edinburgh Collaborative of Subsurface Science and Engineering (ECOSSE, UK). In addition, the International Association of Sedimentologists (IAS) was one of the active supporting institutions to the Congress, providing financial support for some travel grants for post-graduate students attending the conference.

Deep-water circulation is a critical part of the global conveyor belt that regulates Earth's climate (Fig. 2). The bottom (contour) current component of this circulation is hugely significant in shaping the deep seafloor, through erosion, transport and deposition (Fig. 3). As a result, a great variety of depositional and erosive features are developed, including a range of different drifts, sediment waves, moats, furrows, and abraded surfaces. Yet the nature of these deepwater processes and contourites thereby deposited are still poorly understood in detail. Their ultimate decoding will undoubtedly yield results of fundamental importance to earth and ocean science. The Baiona Congress, therefore, focused specifically on

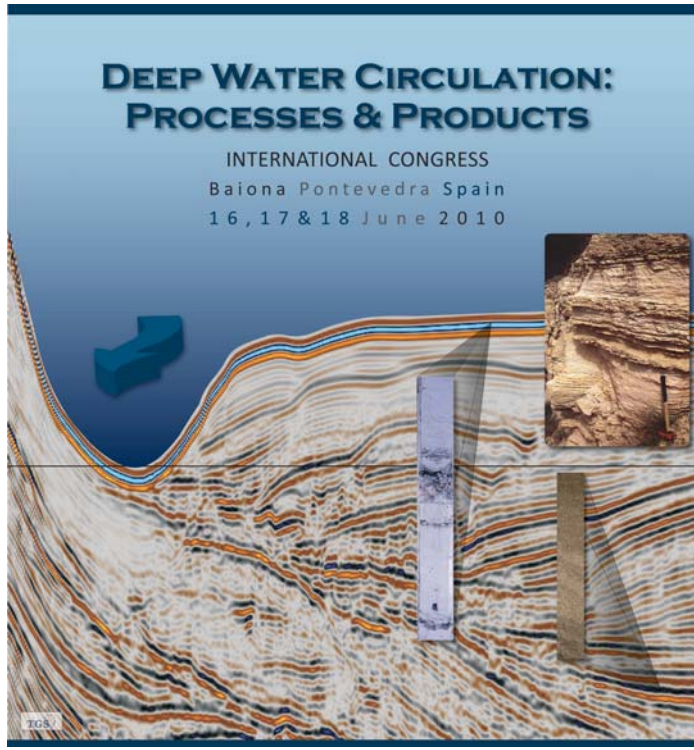


Figure 1. Deep-water Circulation: Processes & Products» (Pontevedra, Spain, 16-18 June, 2010). http://www.facultadeccdomar.es/contourites

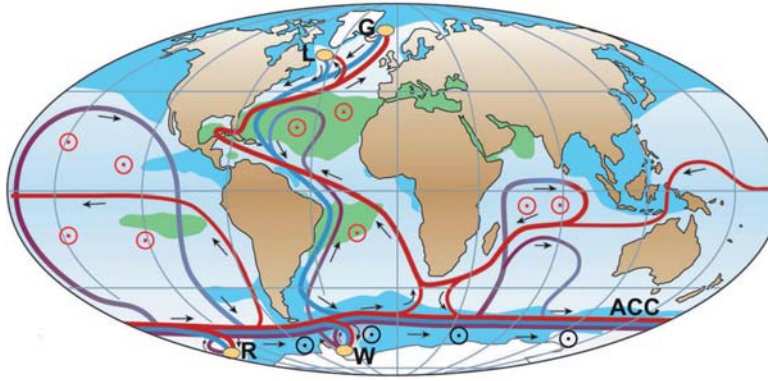


Figure 2. Schematic representation of the global thermohaline circulation. Surface currents are shown in red, deep waters in light blue and bottom waters in dark blue. The main deep water formation sites are shown in orange (Rahmstorf, 2006).

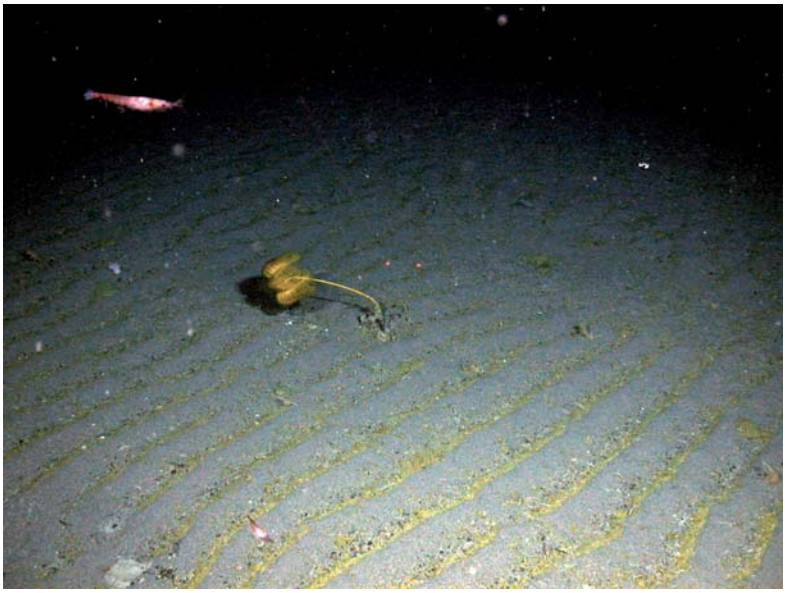


Figure 3. Isis ROV photograph from the Antarctic Peninsula Pacific margin. The photo was taken in the axis of the channel north of the proximal part of Drift 5, at about 3000m depth [courtesy of J.A. Dowdeswell (Scott Polar Research Institute, Cambridge, UK); P.A. Tyler and Gwyn Griffiths (National Oceanographic Center, Southampton, UK); and Robert D. Larter (British Antarctic Survey, UK)]

processes and deposits related to bottom-water circulation.

Nearly one hundred abstracts from 255 contributors were presented at the meeting (Hernández-Molina et al., 2010), providing a truly multidisciplinary perspective of interest to both academic and industrial participants. The papers and discussions at this congress have contributed greatly to the advance of knowledge of deep-water bottom circulation and related processes and contourite sediments. The different and multidisciplinary contributions, including geomorphology, stratigraphy, sedimentology, paleoceanography, physical oceanography, deep-water ecology) have demonstrated that the advances in paleoceanographic reconstructions and understanding of the ocean's role in the global climate system depend largely on the feedbacks among disciplines. New insights into the link between the biota and deep-water ecosystem with bottom currents confirm the need for this area to be investigated and mapped. Likewise, it is confirmed that deepwater contourites must be viewed not only to as a scientific target but also as potential resources.

The observations of different datasets presented in the contributions have allowed us to identify five major goals and a number of related topics for future research (Hernández-Molina et al., 2010):

- Characterization of the depositional and erosional elements associated with individual contourite drifts, hiatuses, and with more complex Contourite Depositional Systems (CDSs).
- Detailed understanding of deep-water-mass circulation, including the flow of bottom currents around submarine obstacles, their behaviour and variability in response to tides and benthic storms, and their role in the construction of drifts and bedforms.
- Comparisons between bottom current and gravity flow processes and products, including their distinction from hemipelagic/pelagic sedimentation.
- Careful review of existing facies models, both for outcropping ancient deposits and present marine sediments (Fig. 4), including their association with other deep-water sediment facies, their occurrence and recognition in both modern and ancient series, and their understanding in terms of bottom current process and variability, for both local and global circulation.
- conomic relevance of contourite deposits in the future, especially for oil/gas exploration.

The Congress was sponsored by REPSOL, TGS-NOPEC, PETROBRAS, PARTEX, GAS NATURAL, SECEG SA (Sociedad Española de Comunicación del Estrecho de Gibraltar), Symrad, S.L., Esgemar, S.A., Geomytsa, Tecmarin, Edinburgh Collaborative of Subsurface Science and Engineering (ECOSSE, UK), Baiona Council, Turismos Rías Baixas-Deputacion de Pontevedra, Startplaning, ORGANIZA+, Hotel Talaso Atlántico, and Paradores de España.

The Organizing Committee has been formed by F. J. Hernández-Molina (Univ. Vigo, Spain), D. A. V. Stow (Heriot-Watt Univ., UK), E., Llave (IGME, Spain), M.

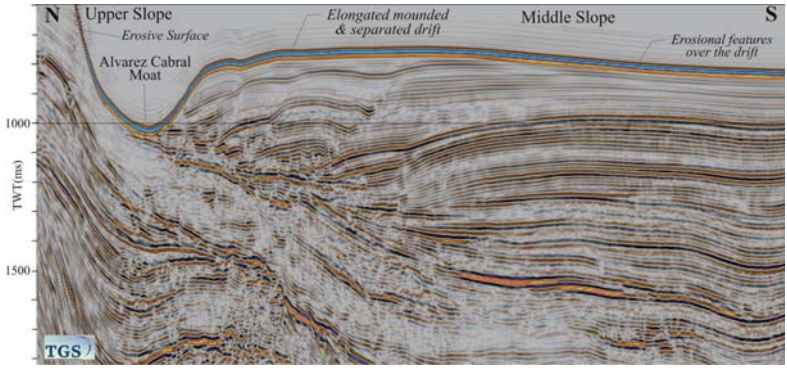


Figure 4. Uninterpreted multichannel seismic-reflection profile across the Faro-Albufeira mounded elongated and separated drift and the Alvarez Cabral moat on the middle slope of the Gulf of Cadiz (data courtesy of TGS-NOPEC Geophysical Company ASA, for this contribution)

Rebesco (OGS, Italy), G. Ercilla (ICM-CSIC, Spain), D. Van Rooij (RCMG, Belgium), A. Mena (Univ. Vigo, Spain), J. T. Vázquez (IEO, Spain) and A. Voelker (LNEG, Portugal).

References

Hernández-Molina, F.J., Stow, D.A.V., Llave, E., Rebesco, M., Ercilla, G., Van Rooij, D., Mena, A., Vázquez, J.T., Voelker, A., (Eds.) (2010). Deep-Water Circulation: Processes and Products. International Congress. Baiona, Pontevedra, Spain. 16, 17,& 18 June 2010 Geo-Temas-11, 204 pp.

Rahmstorf, S. (2006). Thermohaline ocean circulation. Encyclopedia of Quaternary Siciences, Elsevier, Amsterdam.

Stow, D.A.V., Pudsey, C.J., Howe, J.A., Faugères, J.C., Viana, A.R. (Eds), (2002). Deep-Water Contourite Systems: Modern Drifts and Ancient Series, Seismic and Sedimentary Characteristics. Geological Society of London, Memoirs 22, 464 pp.

Francisco J. Hernández-Molina
Universidad de Vigo, Spain
E-mail: fjhernan@uvigo.es

Announcement

DELTANET INTERNATIONAL SYMPOSIUM

Impacts of Global Change on Deltas, Estuaries and Coastal Lagoons

Research, observation and management
Ebro Delta, Catalonia, Spain
June 6-9, 2011

Deltas, estuaries and coastal lagoons are among the most productive and diverse ecosystems. In the same time, they are intensively exploited and impacted by human activities that strongly modify habitats, productivity and fluxes of water, sediments and nutrients. Increasing alteration of river basins together with threats of climate change, energy scarcity and biological invasions put these systems at risk. The complexity and vulnerability of this type of system in terms of natural functioning and human impacts makes it urgent the definition and implementation of new ways to conduct research, observation, and management to mitigate the impacts of human activities and natural hazards in the coastal zone. Deltas are also excellent areas to study future impacts of global change because most are subsiding and thus are often already experiencing rapid rates of relative water level rise predicted for the near future eustatic sea-level rise. In addition, many deltas and estuaries have experienced either incrases or decreases in freshwater and sediment inputs. The main topics of the Symposium will be ***Flooding Risks and Sediment Management***, but workshops on ***Healthy Delta Environment*** and ***Integrated Delta Approach*** will be also organized.

Objectives

Our overarching objective is to analyze and synthesize the main impacts of global change on estuarine systems from the perspective of research, observation systems, management and governance. Our intention is to understand the state-of-the-art and discuss future perspectives and strategies for collaboration between

networks dealing with deltas and estuaries. The meeting will consider the main specific problems of deltaic systems, in particular the challenge of water and sediment management under a scenario of increasing sea level and flooding risks and changes in freshwater input, in order to discuss solutions based on an integrated approach to achieve a healthy delta environment. Another goal of the DeltaNet Symposium will be to involve other international networks on deltas, in order to hold a summit of world delta networks that will chart future collaboration avenues.

DeltaNet

DeltaNet is a network of European deltas and estuaries funded by the Interreg IVC Program of the European Union (Project nº 0540R2). The principal objective of DeltaNet is to set up a learning and policy network of European delta regions. The European delta regions are geographically sensitive areas sharing many similar characteristics, problems and challenges. The delta and estuary regions are faced with a dynamic development and are often characterized by both high population density and intense economic activities, and natural and cultural heritage values. The many spatial and economic demands often threaten sustainable development. Delta regions are becoming a laboratory where different stakeholders, regions and countries are working together to achieve a sustainable spatial, economic and social development The planned exchange of best practices activities are organised around 5 sub-themes: (1) Integrated Delta Approach, (2) Flood Risk and Sediment Management, (3) Healthy Delta Environment, and (4) Delta Awareness. The 5th phase of activities will gather the results of the sub-themes and integrate them into Sustainable Coordinated Delta Policy that considers climate change and energy scarcity (5).

Symposium location and program

The Symposium will be held in the Ebro Delta, one of the most important and endangered Mediterranean coastal wetlands. The Ebro Delta is located in Catalonia, Spain, about 150 km south of Barcelona. With a surface of 330 km^2, the delta contains protected wetland areas rich in waterfowl and fisheries. These natural values support important economic activities associated with tourism, hunting, fishing and aquaculture. A majority of the surface area of the delta, however, is devoted to agriculture (mainly rice cultivation), which occupies 60% of the delta plain. An extensive irrigation system delivers fresh water from the Ebro River to the rice fields, which also host important ecological values.

The tentative program includes one day of workshops, two days of a symposium and one day of field trips. The sessions will have an interdisciplinary and problem-oriented approach, including topics and experts from science, observation and management. Some tentative session topics are: adaptation of deltas and estuaries to sea level rise, low-energy and low-carbon management of coastal areas, flooding risks, sediment imbalances in the watersheds, management of endangered and invasive species, ecosystem restoration.

Supporting Institutions

The main institutional and economic support will come from the European Union (Interreg IVC Program), but the meeting will also have the support of the Catalan Government (Generalitat de Catalunya) and the Spanish Government (Ministry of Environment).

Many scientific institutions support the DeltaNet Symposium. To date, the confirmed ones are: RedMarismas Network (Spanish network of coastal wetlands and lagoons), Geo Coastal Zone Community of Practice (GCZCP), the Coastal and Estuarine Research Federation (CERF), Global Land Cover Network (GLCN), Coastal Global Terrestrial Observing System (CGTOS), UNESCO, Delta Research and Global Observation Network (DRAGON), Programa Català d'Observació de la Terra (PCOT). The support of the International Association of Sedimentologists (IAS) will be discussed in the Bureau Meeting to be held in Mendoza (Argentina). The Estuarine and Coastal Sciences Association (ECSA) is also discussing their involvement.

***Dr. Carles Ibáñez**, President of the Organizing Committee of the DeltaNet Symposium*
Director of the Aquatic Ecosystems Program of IRTA, Centre of Sant Carles de la Ràpita, Catalonia, Spain.
E-mail: carles.ibanez@irta.cat
***Dr. John W. Day**, President of the Scientific Committee of the DeltaNet Symposium*
Distinguished Professor Emeritus, Dept. of Oceanography and Coastal Sciences,
Louisiana State University, USA.

ANNOUNCEMENT

Chapman Conference on

Source to Sink Systems around the World and through Time: Recent Advances Understanding Production, Transfer and Burial of Terrestrial and Marine Materials on the Earth Surface

Oxnard, California, USA
24 – 27 January 2011

The general goal of this conference is to articulate the ideas that are the foundation for a holistic understanding of sediment dispersal from land origins to marine accumulation, and to explore the theoretical and observational studies that support them.

This Chapman Conference will substantially expand the results of individual source-to-sink research projects, by contrasting diverse dispersal systems. An attempt will be made to resolve fundamental differences in the operation of processes that transfer mass across the Earth surface. This effort will develop a global perspective with studies from around the world, and will facilitate the synthesis and integration of S2S research as part of an inclusive international conference, a digital text, and classroom materials.

The conference gets sponsorship from the US National Science Foundation, Statoil, NCED and CSDMS

Fields of Interest

We hope to attract scientists with the following range of backgrounds:

- Sediment dispersal systems around the world;
- Terrestrial and marine environments extending from uplands to deep margins;
- Observation, theory, modeling, and experimentation;
- Modern and ancient environments;
- Interdisciplinary expertise (e.g., biogeochemical cycling);
- Basic and applied science;
- Siliciclastic and carbonate sediments.

Format and Schedule

This will be a four-day meeting, with one of the afternoons on the Santa Clara River. The general plan will be for mornings to be spent in oral plenary presentations. The afternoons will be spent with posters and in smaller breakout groups discussing the daily topics, merging diverse disciplines, and considering ways to move forward. The theme for each morning will have four keynote presentations (30 min) and eight contributed talks (15 min) focused on ***uplands, rivers, coastal oceans, and deep margins***. All other presentations will be in afternoons and will be as posters.

The daily themes are:

a) Inputs to segments of dispersal systems, with emphasis on material transferred
b) Internal storage/ remobilization within segments of dispersal systems, with emphasis on transformations during transfer
c) Outputs from segments of dispersal systems, with emphasis on timing of transfer
d) Special topics, ranging from numerical modeling to interdisciplinary linkages, the stratigraphic record, natural resources, extrapolation to Mars, and the research path forward

Field Trip

The meeting site is near the Santa Clara River dispersal system in central California. The proximity will allow a half-day field trip for participants to head into the field and discuss source-to-sink issues outside meeting rooms. The Santa Clara River has headwaters in the San Gabriel Mountains, flows in a relatively natural condition for a moderate length (<200 km), and reaches the Pacific Ocean and its continental margin just south of Santa Barbara. It is an ideal river for the S2S community to examine during the conference.

Travel Support

Information will be posted soon regarding financial support for participation, including that for students.

Further Information

See http://www.agu.org/meetings/chapman/2011/acall/

For specific information about the scientific program, please contact one of the conveners via e-mail: Chuck Nittrouer (University of Washington) at nittroue@ocean.washington.edu or Steve Kuehl (College of William & Mary) at kuehl@vims.edu.

IAS Postgraduate Grant Scheme

IAS has established a grant scheme designed to help PhD students with their studies. We are offering to support postgraduates in their fieldwork, data acquisition and analysis, visits to other institutes to use specialised facilities, or participation in field excursions directly related to the PhD research subject.

Up to 10 grants, each of about € 1000 are awarded twice a year. These grants are available for IAS members only, and only for PhD students. Students enrolled in MSc programs are **NOT** eligible for grants. Research grants are **NOT** given for travel to attend a scientific conference, **NOR** for acquisition of equipment. Student travel grants for conferences can be usually obtained directly from organizers of the meeting.

The **Grant Scheme Guidelines** provide a summary of required information needed for successful a Grant Application. Applications are evaluated on the basis of the scientific merits of the problems, the capability of the researcher, and reasonableness of the budget.

Supervisor's Letter Guidelines list the information needed.

IAS Grant Scheme Guidelines

The application should be concise and informative and contains the following information (limit your application to 4 pages):

Research proposal - 2 pages maximum
Bibliography - ½ page
Budget - ½ page
Curriculum Vitae – 1 page

Recommendation letter (or e-mail) from the supervisor supporting the applicant is mandatory and the research proposal must be sent directly to the Treasurer of IAS by the application deadline

Guidelines for letter from supervisor

The letter from the supervisor should provide an evaluation of the capability of the student to carry out the proposed research, the significance and necessity of the research, and reasonableness of the budget request. The letter must be sent directly to the Treasurer of IAS by post or e-mail by the application deadline (Patric Jacobs, Department of Geology and Soil Science, Ghent University, Krijgslaan 281/S8, B-9000 Gent, BELGIUM. E-mail: patric.jacobs@ugent.be). An application form is on our website (http://www.iasnet.org).

Grant application

Research Proposal –

- **Title**
- **Introduction:** Introduce the

topic and provide relevant background information; summarise previous work by you or others. Provide the context for your proposed study in terms of geography, geology, and /or scientific discipline.

- **Motivation:** It should have a clearly written hypothesis or a well-explained research problem of geologic significance. It should explain **why** it is important. Simply collecting data without an objective is not considered wise use of resources.
- **Methods:** Outline the research strategy (methods) that you plan to use to solve the problem in the field and/or in the laboratory. Please include information on data collection, data analyses, and data interpretation.
- **Facilities:** Briefly list research and study facilities available to you, such as field and laboratory equipment, computers, library.
- **Bibliography:** provide a list of key (5-10) publications that are relevant to your proposed research. The list should show that you have done adequate background research on your project and are assured that your methodology is solid and that the project has not been done already.
- **Budget:** Provide a brief summary of the total cost of the research. Clearly indicate the amount (in euros) being requested. State specifically what the IAS grant funds will be used for.
- **Curriculum Vitae:** Name, postal address, e-mail address, university education (degrees & dates), work experience, awards and scholarships, independent research projects, your abstracts and publications.

Application deadlines:	**1st session:**	**March 31**
	2nd session:	September 30
Recipient notification:	**1st session:**	**before June 30**
	2nd session:	before December 31

Calendar

7th International Symposium on Eastern Mediterranean Geology

18-22 October, 2010
Cukurova University,
Adana, Turkey

Saziye Bozdag
E-mail: jeosempozyum@cu.edu.tr
Website: www.geology.cu.edu.tr/ISEMG2010/

Source to Sink Systems Around the World and Through Time

24-27 January, 2011
Oxnard, California,
USA

Charles A. Nittrouer
School of Oceanography, University of Washington
E-mail: nittroue@ocean.washington.edu
Steven A. Kuehl
Virginia Institute of Marine Sciences, College William & Mary
E-mail: kuehl@vims.edu
Web-page: http://www.agu.org/meetings/chapman/2011/acall

28TH IAS MEETING OF SEDIMENTOLOGY *

5-8 July, 2011
Zaragoza,
Spain

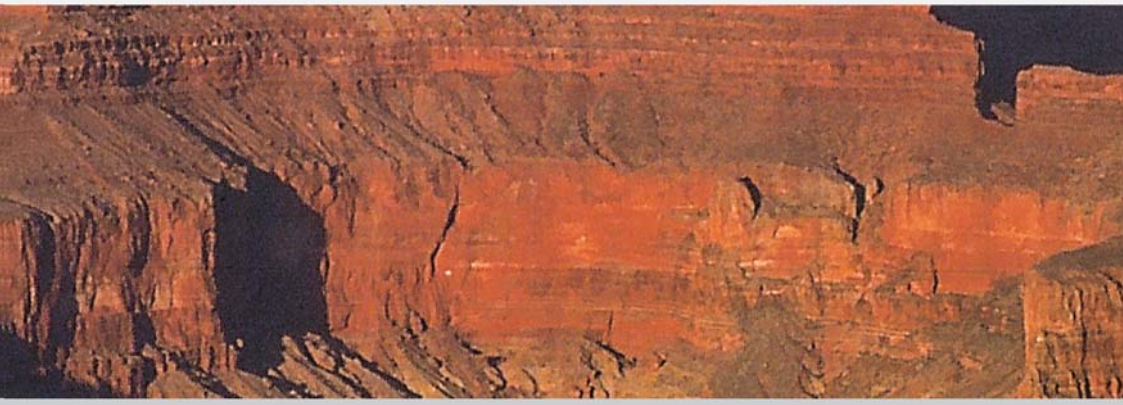
Marc Aurell
University of Zaragoza
E-mail: maurell@unizar.es

29th IAS MEETING OF SEDIMENTOLOGY *

10-13 September,
2012
Leoben,
Austria

Hans-Jürgen Gawlick
University of Leoben
E-mail: hjgawlick@gmail.com

*** THESE EVENTS HAVE FULL OR PARTIAL IAS SPONSORSHIP**



IAS-Homepage:
http://www.iasnet.org

This Newsletter has been printed by
Data Print Ltd. 11a West Way Botley Oxford OX2 0JB, UK
Designed by Proedex s.l. Francisco Silvela 27
28028 Madrid, Spain editorial@proedex.com

Contributions to be sent to:

José-Pedro Calvo
IAS General Secretary
Dpto. Petrologia & Geoquimica
Facultad CC. Geologicas
Universidad Complutense
28040 Madrid, Spain
Tel: +34 91 3944902