THE DEEP-SEA & SUB-SEAFLOOR FRONTIERS CONFERENCE

11-14 March 2012
Sitges (Barcelona) Spain
Hotel Melià Sitges

www.ds3f2012.org

FINAL PROGRAMME
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Welcome

The Deep-Sea and Sub-Seafloor Frontier project (DS³F) welcomes you to its open Conference in Sitges, Barcelona. DS³F is a EU-funded Coordination Action, which is developing sub-seafloor sampling and observing strategies for enhanced understanding of deep-sea and sub-seafloor processes by connecting marine research in life and geosciences, climate and environmental change with socio-economic issues and policy building. A long-term research approach will be established covering: (I) sustainable ocean management, particularly in the deep sea, in view of its enhanced exploitation (mining, hydrocarbon exploration, fisheries and other seafloor and sub-seafloor uses), (II) the necessity to unravel the deep-seated geological processes that drive seafloor ecosystems, and (III) release of the potential of seabed archives for paleo-environmental reconstructions and improved prediction of future climate change.

The Conference in Sitges aims at opening the discussion by gathering key players and top level researchers in the fields of deep-sea research to (I) bring in new scientific, strategic and policy insights, (II) to disseminate the achievements of DS³F to date, and (III) to condense the intellectual outcome of previous ad hoc DS³F workshops towards an EU white paper in the field. European as well as non-European researchers, including top quality keynote speakers, are contributing to this important task. A significant number of young researchers participate to the Conference, who will hopefully benefit from the DS³F roadmap document to be submitted to the EC by mid-2012. Last but not least, the Conference also offers enlightening talks on present priorities and future expectations by EC representatives.

The Conference in Sitges also represents a rather unusual opportunity to generate synergies at the often very productive frontiers amongst disciplines focusing their best efforts on the study of the deep-sea. There are several time slots that participants could use for informal discussions in search of collaborations and joint ventures for the future.

A Conference Proceedings book including 30-40 peer-reviewed manuscripts will be published by Springer Scientific Publishers. Such volume could also accommodate other qualified research results ready for publication and suitable under the DS³F umbrella. The book will be published by the end of 2012, and is likely that a “best of” selection could also appear as a special issue in one of Springer’s marine research journals.

With our thanks for contributing to the success of a multidisciplinary stimulating and fruitful Conference.

The Organising Committee
Organising Committee

**Miquel Canals**  
Universitat de Barcelona, Spain.

**Angelo De Santis**  
Istituto Nazionale di Geofisica e Vulcanologia, Italy.

**Timothy Ferdelman**  
Max-Planck-Institut für Marine Mikrobiologie, Germany.

**Bo Barker Jørgensen**  
Aarhus Universitet, Denmark.

**Achim Kopf**  
MARUM Universität Bremen, Germany.

**Catherine Mével**  
Institut de Physique du Globe de Paris, France.

**Jürgen Mienert**  
Universitetet i Tromsø, Norway.

**Heiko Pälike**  
National Oceanography Centre, University of Southampton, United Kingdom.

**Walter Roest**  
Institut Français de Recherche pour l’Exploitation de la Mer (Ifremer), France.
# Programme at a Glance

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Sunday, March 11th

19.30 – 20.30  Ice breaker party  Atrium of the Conference Venue

Monday, March 12th

09.00 – 09.10  Conference opening

09.10 – 09.40  Keynote presentation  
John Ludden, British Geological Survey.  
Scientific research drilling in Europe: Quo Vadis.

09.40 – 10.30  Litosphere-biosphere interactions and resources  
Regular presentations  
Chair  Walter Roest, Ifremer.

A Mid-Atlantic microbial observatory for studying the deep biosphere below North Pond.

O-002 – D. Billett.  
The environmental management of deep-sea mining.

O-003 – C. Hubert, J.R. de Rezende, E. Bell, I. Head, A. Loy and B. Barker Jørgensen.  
A constant flux of diverse thermophilic bacteria into cold marine sediments.

Environmental implications of manganese nodule mining in the central South Pacific in comparison with other areas.


10.30 – 11.00  Keynote presentation  
Susan E. Humphris, Woods Hole Oceanographic Institution.  
Basalt-seawater interactions and subsurface fluid flow in the oceanic crust.

11.00 – 11.30  Coffee break

11.30 – 12.00  Keynote presentation  
Yves Fouquet, Ifremer.  
Mineral resources of the deep sea: Strategic resources for the future.
Monday, March 12th

12.00 – 13.00  Sedimentary seafloor and subseafloor ecosystems
Regular presentations
Chair  Timothy Ferdelman, Max Planck Institute for Marine Microbiology.


13.00 – 14.30  Lunch & informal discussion

14.30 – 15.00  Keynote presentation
Charles Paull, Monterey Bay Aquarium Research. Distinctive geomorphology of gas venting and near seafloor gas hydrate-bearing sites.

15.00 – 16.00  Geofluids and gas hydrates
Regular presentations
Chair  Juergen Mienert, University of Tromsø.


O-017 – F. Fontaine, M. Rabinowicz, M. Cannat and J. Escartin. Hydrothermal and magmatic dynamical couplings at mid-ocean ridges: Controls on the location of high-temperature hydrothermal fields.

16.00 – 16.30 Coffee break

16.30 – 17.20 Drilling technologies and associate infrastructures

Regular presentations
Chair Cathérine Mevel, Institut de Physique du Globe de Paris.


O-021 – T. Freudenthal, M. Bergenthal, N. Sultan, G. Bohrmann and GUINECO-MeBo scientific party. Drilling gas hydrates with the sea floor drill rig MARUM-MeBo.

O-022 – D. McInroy, D. Smith, U. RöhI and S. Davies. Mission specific platform expeditions within the IODP.

17.20 – 17.50 Keynote presentation
Mairi Best, University of Victoria. Deep sea research via cabled observatories: Experience from Neptune Canada.

17.50 – 19.50 Poster Session

19.50 – 20.30 Informal discussions & free time

20.30 Departure for Conference Dinner
Tuesday, March 13th

09.00 – 09.30  **Keynote presentation**  
R. John Parkes, Cardiff University.  
Deep sub-seafloor sediments – a large biosphere: Geosphere habitat!

09.30 – 10.30  **Deep biosphere**  
Regular presentations  
Chair  Bo Baker Jørgensen, Aarhus University.

O-023 – M.A. Lever.  
The apparent paradox of acetogenesis in the energy-starved subseafloor.

Serpentinization fuel deep microbial ecosystems in the hydrating mantle.

Correlating geochemical data with microbial community structure in highly stratified sediments from the Arctic mid-ocean ridge.

Novel lipid-based evidence regarding the composition and size of subseafloor microbial communities.

Effect of temperature on major chemoorganotrophic and chemolithotrophic processes in coastal marine sediments: insights for the deep biosphere.

Modeling the benthic methane cycle: A journey through time and space.

10.30 – 11.00  **Keynote presentation**  
Timothy Eglinton, ETH-Zurich.  
Spatiotemporal variability in deep ocean biogeochemical processes.

11.00 – 11.30  **Coffee break**

11.30 – 12.00  **Keynote presentation**  
Russell B. Wynn, National Oceanography Centre.  
Deep-sea sedimentary processes and geohazards along the north-east Atlantic continental margin: New insights from geophysical and core data.

12.00 – 13.10  **Sediment dynamics and geohazards**  
Regular presentations  
Chair  Miquel Canals, University of Barcelona.
Dense shelf water cascading and the Robbin Hood effect.

A novel approach for very-high-resolution near-shore landslide investigations - Finneidfjord (northern Norway) case study.

Sediment transfer into submarine canyons: Observations and modelling of turbidity current generation.

Submarine canyon persistence on constructional margins: An example from the Ebro margin (NW Mediterranean).

The large tsunami of 1956 in the South Aegean Sea, Greece, revisited.

O-034 – H. Toh and Y. Hamano
Seafloor geomagnetic observatories may have high potential for use in global tsunami early warning.

Active faulting and slope failures in the South Iberian margins: Overview and implications for earthquake and tsunami: Hazard assessment.

13.10 – 14.30 Lunch & informal discussion

14.30 – 15.30 Climate change and response of deep-sea-biota
Regular presentations
Chair ▶ Heiko Pälike, National Oceanography Centre, University of Southampton.

The Southern Ocean biological pump and abrupt changes in glacial atmospheric CO$_2$.

O-037 – C. Escutia and SCAR-Antarctic Climate Evolution (ACE).
Unveiling climate and ice sheet history by drilling in Antarctic margins – Future perspectives.

A high-resolution Paleocene - Eocene benthic stable isotope record for the South Atlantic (ODP Site 1262).
**Tuesday, March 13th**

Revised Miocene-Pleistocene calcareous nannofossil biostratigraphic zonation from low and middle latitudes.

**O-040** – L. Alegret and E. Thomas.
Rates of ocean acidification: The Cretaceous/Paleogene and Paleocene/Eocene boundaries.

**O-041** – A.HL. Voelker, F. Abrantes, P.A. Martin and S. Lebreiro.
Iberian margin deep water dynamics: The role of the Mediterranean Outflow Water.

15.30 – 16.00 **Keynote presentation**
*Rainer Zahn*, Universitat Autònoma de Barcelona.
From past oceans to future climates: Palaeo-research in a new era of actionable science.

16.00 – 16.30 **Coffee break**

16.30 – 18.00 **Talks by EC representatives**
*Iain Shepherd*  
*Ana-Teresa Caetano*

**Joint discussion**

18.00 – 19.30 **Ad hoc meetings**

19.30 – 20.30 **Informal discussions & free time**

**Wednesday, March 14th**

**Restricted Meetings**

09.00 – 11.00 **White Paper Writing Group**

11.00 – 11.30 **Coffee break**

11.30 – 13.00 **DS³F Steering Committee**

13.00 – 14.30 **Lunch**

14.30 – 16.00 **DS³F Steering Committee (continued)**
Poster Presentations

**LITOSPHERE - BIOSPHERE INTERACTION AND RESOURCES**


**P-006** – V. Chavagnac, C. Boulart, C. Monnin and A. Castillo. Spatial and temporal variability of fluid and gas chemical composition at the Lucky Strike hydrothermal system (Mid-Atlantic Ridge) since the 1990’s.


**P-009** – A. Delacour, M. Andreani, M. Godard, M. Cannat, C. Mével and P. Cartigny. Serpentization and element mass transfers at mid-ocean ridges.

**P-010** – B. Eickmann, M. Peters, H. Strauss, I. Thorseth and R. Pedersen. Barite chimney formation in hydrothermal systems along the Arctic mid-ocean ridge.

**P-011** – G. Früh-Green and S. Lang. Fluid-rock-microbe interactions at the Lost City hydrothermal field: Biogeochemical consequences of serpentization.

**P-012** – G. Garuti, P. Alfonso, J. Proenza and F. Zaccarini. Geochemical and biogenic characters of seafloor hydrothermal sulfide in the ophiolites of the Northern Apennine, Italy.

**P-013** – M. Godard, P. Gouze, M. Andreani, L. Luquot and S. Peuble. Serpentization and carbonation reactions and hydrothermal flow in ultramafic sub-seafloor: First results from flow-through experiments.

**P-014** – F.J. González, L. Somoza, T. Medialdea, R. León, T. Torrres and J.E. Ortiz. Accumulation of metals in pyrite biomineralizations induced by sulphate reducing bacteria on seepage structures from the Gulf of Cadiz.


P-029 – S. Titarenko and A. McCaig. Modelling the Lost City hydrothermal system.
**P-030** – A. Uchman and V. Stoyanova. 
Ring arrangement of deep-sea polymetallic nodules related to burrowing activity of the bonnelid echiuran worms.

The basin-scale tectono-sedimentary structure of the Tyrrhenian Sea.

**P-032** – F. Zaccarini and G. Garuti. 
Crystallization of chlorite in seafloor and sub-seafloor: the example of VMS deposits of the Northern Apennine ophiolites (Italy).

Unveiling the hidden biodiversity: colonization of meiofauna in deep-sea hydrothermal vents.

### SEDIMENTARY SEAFLOOR AND SUB-SEAFLOOR ECOSYSTEMS

Microbial processes in methane-rich sediments along an active fault (Marmara Sea).

**P-035** – M. Buatier, D. Charpentier, A. Gaudin and C.G. Wheat. 
Origin and mechanism of formation of Fe-rich concretions in deep calcareous sediments (Pacific Ocean, Costa Rica margin).

**P-036** – A. Colaco, F. Tempera, F. Cardigos and R. Serrao Santos. 

**P-037** – A. Damusyte, A. Bitinas, D. Daunys, J. Paskauskaité and J. Seckus. 
Moraine reefs on the Lithuanian offshore, south-eastern Baltic.

Geomorphology as a key to detect bottom water pathways and benthic ecosystems communities: The case of George V Land continental slope, East Antarctica.

**P-039** – E. Delory, J. Hernández-Brito and O. Llínas. 
The PLOCAN Observatory objectives in deep-sea and seafloor monitoring of the central-eastern Atlantic Ocean.

Acidification effect on the taxonomic composition of benthic diatoms.

**P-041** – S.K. Fagervold, P.E. Galand, M. Zbinden, F. Gaill, P. Lebaron and C. Palacios. 
Sunken woods on the ocean floor provide diverse specialized habitats for microbes.

Biogeochemistry of phosphate in ultra-oligotrophic South Pacific Gyre seafloor and sub-seafloor sediments (IODP Expedition 329).

**P-043** – A. Grehan. 
Promoting ecosystem based management of deep-sea resources: An overview of the FP7 Coralfish Project.

**P-045** – S. Kholeif. An overview of dinoflagellate cysts population in the Nile deep sea fan sediment.

**P-046** – M. Krüger, C. Algora, F. Gründger, T. Pletsch, V. Damm, H-H. Richnow and L. Adrian. Quantification of microbial activities and communities in Arctic marine sediments form the Northern Baffin Bay.


**P-049** – M. Pierdomenico, F.L. Chiocci, M. Ingrassia, L. Macelloni and E. Martorelli. Applications of underwater acoustics to seafloor habitat mapping: Examples from three case studies (Hudson Canyon, Mississippi Canyon Block 118 and Pontine Insular Shelf).


**P-051** – A. Torti, M.A. Lever and B.B Jørgensen. Extraction and phylogenetic characterization of the extracellular DNA pool in marine sediments, from the surface to the subsurfaces biosphere.


**DEEP BIOSPHERE**

**P-053** – E. Bell. Heat resistant and thermophilic sulfate-reducing bacteria in a cold estuarine sediment.


**P-055** – M. Ivarsson and S. Bengtson. Fossilized fungi in subseafloor basalts.


**P-058** – P. Meister. A dynamic deep biosphere: Why deep drilling is essential for understanding subsurface life.


SEDIMENT DYNAMICS AND GEOHAZARDS

P-063 – M. Ask and D. Ask. Constraining in situ stresses in Japan Trench sediments (ODP LEG 186) using bore-hole failure and rock mechanic data.


P-069 – D. Casalbore, C. Romagnoli, F. Latino Chiocci, A. Bossman and V. Frezza. Widespread mass-wasting processes and related geohazard on two submarine volcaliclastic apron: Stromboli and Vulcano case-studies (Italy).


P-071 – F.L. Chiocci, D. Ridente, A. Bosman, D. Casalbore, E. Martorelli, E. Morelli and A. Sposato. Regional seafloor mapping in geohazard perspective: results and examples from the Italian project MAGIC (Marine Geohazards along the Italian Coasts).

P-073 – P.M. De Martini, D. Pantosti and A. Smedile. 
Past tsunamis along eastern Sicily (Italy): geologic input to hazard assessment.

Recent sediment transport in Whittard Canyon: not just down slope.

Characterization of seabed sediments by seismic interface wave dispersion.

P-075b – C. Dumas and D. Aubert. 
Impact of flood events on the transfer of particulate trace metals to the sea.

“Dangerous litter” on a very dynamic slope of the southern Adriatic: Ship wrecks and unexploded weapons dumping areas.

Seafloor instability and mass wasting processes along the eastern Gela slope.

Along- and down-slope sedimentary processes on the continental slope off NW Svalbard, European Arctic.

P-079 – A. Georgiopoulou, P. Shannon and P. Haughton. 
Seismic investigation of the complex scar of the Rockall Bank mass flow, NE Atlantic.

P-080 – M. Higueras, A. Sanchez-Vidal, P. Kerhervé and A. Calafat. 
Biogeochemical characterization of the riverine particulate organic matter transferred to the NW Mediterranean Sea.

Numerical simulation of the BIG95 submarine landslide-generated tsunami.

P-082 – J. Inwood, J. Lofi and E. 313 Scientists. 
Insights into sequence stratigraphy, fluid flow processes and sediment structure using downhole logging analyses from the New Jersey shelf (IODP Expedition 313).

P-083 – A. Karageorgis and E. Krasakopoulou. 
Particulate matter dynamics in submarine canyons south of Crete Island, Greece.

Submarine landslide dynamics and frequency.

The Aviles submarine canyon drainage system, northern Iberian margin.

Fluid flow patterns and submarine slope instability of glaciated continental margin (Storfjorden, NW Barents Sea). Constrains from permeability and compressibility tests.

Sedimentary processes in active rifts of the European continental margin: The Gulf of Corinth (NE Mediterranean).

P-089 – J. Mascle. Images of the deep Mediterranean Sea floor as illustrated from swath bathymetry.


P-091 – S. Monna and T. Sgroi. Improved knowledge of volcanic and tectonic structures of the southern Tyrrhenian (Italy) from the integration of marine and land seismic data.


Extreme event impacts on seafloor ecosystems.

Subglacial and sub-ice shelf sea floor and sub-surface exploration of the Ross Sea and West Antarctic Ice Sheet.

The Nice airport landslide area as an ideal natural submarine landslide laboratory for identification of precursors.

Scientific ocean drilling for investigating submarine landslides and related geohazards.

Evidence for periodic formation of strong bottom currents on the Cyclades Plateau, central Aegean Sea: Implications for the formation of the Deep Cretan Water.

Deciphering the role of gullies in submarine canyon evolution: the drainage network of Foix Canyon (NW Mediterranean Sea).

Expression and influence of the Mediterranean Outflow Water on the slopes of the Biscay margins.

Influence of seamounts on control and triggering tsunamis in the Alboran Basin (Continental margins).

P-109 – J. Vitorino and I. Martins. 
The Nazaré Canyon Observatory (W Portugal) - findings and challenges.

Volcanic ash occurrence as a key in submarine slope failure.

On the occurrence of the cold-water coral, *Lophelia pertusa*, why, when and where?

**GEOFLUIDS AND GAS HYDRATES**

P-112 – M. Busetti, R. Geletti and D. Accettella. 
Possible relationship between ecosystems in extreme environment, gas hydrate and gas seeping: An example from the OGS Explora Mounds.

P-113 – M. Comas. 
An overview of mud volcanism in the Alboran Sea: From shale diapirs to methane seepages.


P-119 – R. James, D. Connelly and C. Graves. Controls on methane release from sub-seafloor sediments in the Arctic Ocean.


P-121 – J. Mienert, A. Rajan and B. Stefan. Arctic margin fluid expulsion systems controlled by geology.

P-122 – C. Ockert, B. Teichert, S. Kaufhold and N. Gussone. CA-isotopes in marine porewaters as proxies for diagenetic processes.


Sub-salt fluids and salt tectonics in the eastern Balearic Basin - west Sardinia margin.

CLIMATE CHANGE AND RESPONSE OF DEEP-SEA BIOTA

Core-seismic integration of lower-middle Miocene sequences in New Jersey shallow shelf (IODP Expedition 313).

Rapid changes in W-Mediterranean deep circulation along the last 50 yr BP and their impact in deep ecosystems.

Millenial-timescale resolution chronostratigraphy in turbidites, a new window in past environmental changes: recent findings and perspectives.

Present-day sea surface temperature estimates based on coccolith accumulation rates on the Chilean continental slope.

Intermittent triggering of high-energy hydro-sedimentary processes by sea-level oscillations during the last 0.5 M years: The river-dominated Gulf of Lion record.

P-135 – I. Hall, M. Kienast, C. Kissel, L. Peterson, R. Schneider and R. Zahn.
Images(2): Into a new decade of marine global change studies.

Paleoenvironmental imprint on subseafloor microbial communities in Western Mediterranean Sea Quaternary sediments.

P-137 – M. Lavaleye, G. Duineveld, R. Jeffreys, M. Bergman and R. Witbaard.
Deepsea fish and megafauna: Quick indicators of interannual variation and climate change?

Correlating geochemical, petrophysical and sedimentological changes through the mid-Miocene global cooling event in New Jersey shallow shelf cores (IODP Expedition 313).

P-139 – P. Montagna and M. Taviani.
“New frontiers” in the geochemical investigation of deep-water biogenic carbonates.

P-140 – S. Ortiz and M. Kaminski.
Response of deep-sea biota (benthic foraminifera) to global cooling during the Eocene-Oligocene climate transition.

P-141 – H. Pälike and A. Ridgwell.
New data and model results for the Cenozoic evolution of the Carbonate Compensation Depth in the Equatorial Pacific.


DRILLING TECHNOLOGIES AND ASSOCIATE INFRASTRUCTURES

P-144 – M. Ask, B. Ussler and E. Members. The EDP technology roadmap: engineering development aiming at meeting scientific needs.


P-150 – C. Mével and G. Camoin. Scientific ocean drilling: The future of ECORD and IODP.


P-154 – S. Toczko, J. Mori, F. Chester and E. Brodsky. Expedition to a fault – drilling the Tohoku earthquake.

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Social Programme

Ice Breaker Party  ▶  Sunday, March 11th, 2012 ▶  19.30 hours
The **ice breaker party** will take place at the atrium of the Conference venue, Hotel Melià Sitges.

Conference Dinner  ▶  Monday, March 12th, 2012 ▶  21.00 hours
The Conference Dinner will take place at **Finca Mas Solers**

Located in **Sant Pere de Ribes**, 5 minutes from Sitges, in the heart of the Costa del Garraf. Finca Mas Solers is a Catalan Renaissance-style mansion of the late nineteenth century.

The Conference Dinner is included in the registration fee. Previous confirmation of attendance at the Registration Desk is required.

Additional tickets can be bought at the Registration Desk (rate per person: 75 €).
Departure from Conference venue at 20.30 hours.

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We are confident that with this wonderful environment, the **The Deep-Sea & Sub-Seaﬂoor Frontiers Conference** dinner will be a success that you will always remember with a smile.
Conference Information

Conference Venue
Hotel Melià Sitges
Joan Salvat Papasseit, 38
08870 Sitges, Barcelona, Spain
Ph. +34 938 110 811 • www.melia-sitges.com/en

Conference Secretariat
Mondial & Cititravel Congresos
Rosselló, 303, ático 1 • 08037 Barcelona, Spain
Ph. +34 932 212 955 • Fax +34 934 592 059
ds3f2012@mondial-congress.com

Registration
Registration desk hours
Sunday, March 11th 16.00 – 19.30 h
Monday, March 12th 08.00 – 20.00 h
Tuesday, March 13th 08.00 – 18.00 h
Wednesday, March 14th 08.30 – 16.00 h

Certificate of Attendance
The certificate of attendance will be delivered as part of the Conference Documentation upon your arrival and registration at the Conference Venue.

Identification Badges
All conference delegates will receive their individual badge at the Registration Desk with the rest of documents. Please wear it at all times.

Oral Presentations
Presenters have to upload their presentation at the session room.
Please use a memory stick to upload your presentation.
Presentations must be uploaded and checked not later than 2 hours before the speech. The audiovisual equipment will be ready to open the different versions of Microsoft Office® and Mac, and videos are allowed. Using own computers in the session room will not be allowed. Therefore, videos and animations to be included in presentations should be transformed to standard formats of common use.

Session room opens
Sunday, March 11th 19.30 – 20.30 h
Monday, March 12th 08.30 – 18.30 h
Tuesday, March 13th 08.30 – 18.00 h

Poster Presentations
All posters are numbered in the following format: P-00X. You have to hang your poster in the board with the number of your poster. Double faced tape and scissors will be available at the Registration Desk.
Posters will be displayed on Monday 12th, from 08.00 h. and will stay up during the whole Conference. The Organisation cannot be deemed responsible for posters that have not been removed by Tuesday 13th at 19.30 h.
A poster session will be held on Monday 12th March from 17:50 to 19:50 h. It is required that the first author stays besides of his/her poster during the session time.
Insurance
The Deep-Sea and Sub-Seaﬂoor Frontiers Conference, or its agents, will not be responsible for any medical expenses, loss, damages or accidents during the Conference.

Internet Access
Wi-Fi connection is included and free of charge during the Conference dates.

Recording Equipment and Cameras
The use of personal recorders and cameras is not permitted during the sessions.

Official Transportation
Official transportation from and to Barcelona International Airport will be provided on Tuesday 13th March and on Wednesday 14th March. Information will be available at the Registration Desk.

Local Information

Banks
Official opening hours of banks in Spain are from 8.30 to 14.00 from Monday to Friday. Change of foreign currencies to Euros available at the Hotel Reception Desk.

Climate
Sitges and Barcelona enjoy a Mediterranean climate with mild, sunny winters, warm summers and relatively low rainfall. The average temperature in March is 12/14°C (lower means) and 16/18°C (upper means). Sunny winter days are ideal for strolling along the promenades or sitting out on restaurant or café terraces.

Credit Cards, Currency and Exchange
All major international credit cards are accepted. Foreign currency and traveler’s cheques can be exchanged in Spain at banks and foreign exchange offices. Cash-point machines accepting major international credit cards and charge cards are available at most banks. The Spanish currency is the Euro.

Electrical power
A 2-pin round adapter is necessary for electrical appliances. The electric current used is 220 volts/50hz.

Shopping
Normal trading shopping hours are Monday to Saturday from 9.00 to 13.00 and 16.30 to 20.00. As Sitges is a summer village, some shops are open on Sundays.

Tipping
Service is generally included in restaurant bills. A 10% tip is customary to show appreciation of services provided.

VAT
There is a variable value added tax (VAT) of 8% to 18% applied to most items and services but in most prices you see will include it. When not included, it should be clearly indicated.
Notes
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