

RELATÓRIO DE VIAGEM INTERNACIONAL

Seminário “Mineral Resources on the Mid-Atlantic Ridge - Status and Perspectives” em Trondheim, Noruega, e Participação no European Geological Union (EGU)

Roberto Ventura Santos - DGM

Local: Trondheim, Noruega, e Viena, Austria

Data: 22-30/Abril/2014

Abril/2014

Objetivo:

Participar e apresentar palestra no seminário organizado pelo Serviço Geológico da Noruega, em Trondheim, que abordou o tema "Mineral Resources on the Mid-Atlantic ridge – status and perspectives". Em seguida participamos de European Geological Union Annual Meeting onde apresentamos vários trabalhos na forma de posters e participamos da reunião anual do Projeto ClimAmazon.

Seminário em Trondheim:

Participaram desse seminário representantes de instituições públicas e privadas de vários países (vide programa anexo) que desenvolvem pesquisa e prospecção em regiões oceânicas. Dentre as questões fundamentais do seminário cabe destacar os desafios tecnológicos e ambientais no âmbito dos projeto de prospecção em fundos marinhos e, principalmente, de exploração.

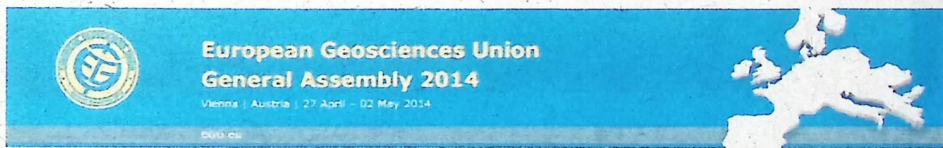
Esse tema é particularmente relevante para o Brasil e para a CPRM tendo em vista a recente aprovação do Plano de Trabalho para prospecção no Alto

do Rio Grande. Os participantes do seminário representam um conjunto de países com alto desenvolvimento tecnológico e que se encontram na vanguarda das pesquisas oceanográficas. Por exemplo, foi apresentado pelo representante da Alemanha técnicas e estratégias para a identificação de depósitos de sulfetos maciços em zonas hidrotermais não ativas. A prospecção desse tipo de depósito é mais complexa tendo em vista que tende a ser mais oxidados, perdendo dessa forma algumas propriedades geofísicas, como o magnetismo.

O representante da Noruega apresentou importantes avanços sobre a história geotectônica da plataforma daquele país, com destaque para os importantes depósitos de petróleo e gás.

O seminário foi importante também para se discutir projetos futuros, a semelhança da proposta de cooperação que o Serviço Geológico da Noruega está propondo à CPRM.

European Geological Union (EGU):



The banner features the EGU logo on the left, the text "European Geosciences Union General Assembly 2014" in the center, and a stylized map of Europe on the right. Below the banner is a navigation menu and several informational sections.

Menu

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- Press & Media
- Exhibition
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- Geopots Vienna
- Imprint


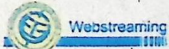

**European Geosciences Union
General Assembly 2014**
Vienna | Austria | 27 April – 02 May 2014

Thank-you to all Participants

The EGU General Assembly 2014 was again a great success with 4,829 oral, 9,583 poster, and 483 PICO presentations. 568 unique scientific sessions together with 126 Poster Summaries and Discussions as well as 245 side events created an interesting programme. At the conference 12,437 scientists from 106 countries participated, of which 27% were students, 15,000 copies of EGU Today distributed, keen media presence and reporting, and thousands of visits to the webstreams as well as to the EGU blog GEOLOG. We thank all of you very much for your attendance and your active contribution to this great event.

We would be very pleased to welcome you back at the EGU General Assembly 2015, 12 – 17 April 2015, Vienna, Austria.

EGU2014 Photo Competition
Please check the winners of the EGU2014 Photo Competition.



A reunião anual da European Geological Union é um dos principais eventos da Europa, contando com mais de 12 mil pesquisadores da Europa e de outras partes do mundo. O evento contou com cerca de 5 mil apresentações orais e mais de 9,5 mil apresentações na forma de postes abordando os mais diversos temas das ciências da terra.

Durante o evento participamos da reunião anual do Projeto ClimAmazon financiado pela Comunidade Européia, no qual coordeno as atividades relativas à evolução do projeto. Além dessa, reunião, na qual foram discutidos os avanços do projeto, apresentamos trabalhos sobre pesquisas desenvolvidas no âmbito desse projeto.

Conclusões e recomendações

Com relação ao Serviço Geológico da Noruega, recomendo fortemente que venhamos a desenvolver projetos conjuntos e que montemos um termo de cooperação técnica e científica. Essa instituição possui um quadro de pesquisadores e técnicos altamente especializados que muito poderiam contribuir para o aprimoramento das atividades desenvolvidas pela CPRM.

Quanto ao EGU, é importante destacar que é um dos principais eventos das ciências da terra e constitui um excelente evento para se acompanhar os desenvolvimentos mais avançados nessa área. Cabe destacar ainda, o sucesso da reunião Anual do ClimAmazon, demonstrando a efetiva interação entre pesquisadores brasileiros e europeus no âmbito de projeto da Amazônia. A CPRM, particularmente, possui papel estratégico na medida em que é uma das principais instituições brasileiras que operam na Amazônia.

Anexos:

- Programa do Seminário na Noruega;
- Cópia da palestra apresentada;
- Programa de atividades no EGU.

**24-25 April
2014**

Mineral resources on the Mid-Atlantic ridge - status and perspectives

**2nd Norwegian "Lunch-to-lunch" workshop
on ocean floor mineral deposits.
Speakers from several countries bordering the Atlantic.**

DAY 1: CONFERENCE, THURSDAY APRIL 24, 2014

- 12:00 **Welcome to Trondheim**
Managing Director Morten Smelror, Geological Survey of Norway
- 12:15 **Norway**
Rolf Birger Pedersen, Centre for Geobiology, University of Bergen
Steinar L. Ellefmo & Fredrik Søreide, NTNU
- 12:55 **Russia**
Georgy Cherkashov, VNIOkeangeologia
- 13:25 **Coffee break**
- 14:00 **Brasil**
Roberto Ventura Santos, Director of Geology and Mineral Resources, Geological Survey of Brazil
- 14:30 **France**
Julien Denegre, Technip and IFREMER
- 15:00 **Germany**
Sven Petersen, GEOMAR
- 15:30 **Coffee break**
- 16:00 **Portugal**
Pedro Madureira, EMEPC (Task Group for the Extension of the Continental Shelf)
- 16:30 **United Kingdom**
Paul Lusty, British Geological Survey
- 17:00 **Iceland**
Dr. Ármann Höskuldsson, Research Professor, Nordvolk, Institute of Earth Sciences, University of Iceland
- 17:30 **Environmental seabed mapping**
- experiences from the Norwegian shelf, slope and continental rise
Terje Thorsnes, NGU
- 18:00 **End of session.**
- 18:30 **Demonstration of G-plates modelling tool in the lobby**
- 19:00 **Dinner**

Workshop
Mineral resources on the Mid-Atlantic ridge: status e perspectives

"The Rio Grande Rise and Mid-Atlantic Ridge Projects"

Roberto Ventura Santos
 Brazilian Geological Survey

Trondheim, Norway
 April, 2014




Geological Survey of Brazil - CPRM

IODP Workshop
 April 1-4, 2014
 Scientific Drilling in the South Atlantic



Seminário sobre Submersíveis
 Desbravando o Mar Brasileiro




Geological Survey of Brazil - CPRM

Marine Geology

- Deep Ocean Program
- Brazilian Platform Program

Serviço Geológico do Brasil – CPRM

Polymetallic Sulphides Deposits on the Seabed
 Sampling Locations and Hydrothermal Vents

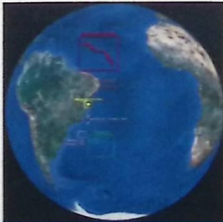






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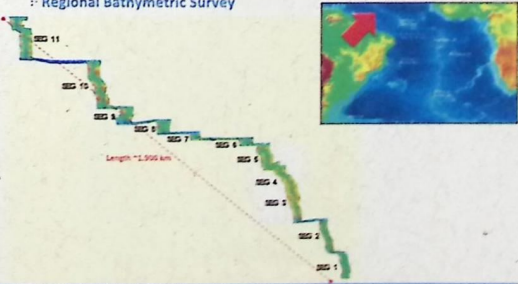


PROJECTS OF THE DIVISION OF MARINE GEOLOGY

1. GISouthAtlan/cOcean!
2. TheBrazilianPla: orm!
3. Jequi/nhonhaProject!
4. Mid-Atlantic Ridge Project – PROCORDILHEIRA
5. Rio Grande Rise Project – PROERG

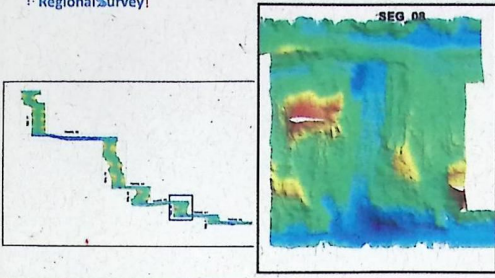
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Regional Bathymetric Survey

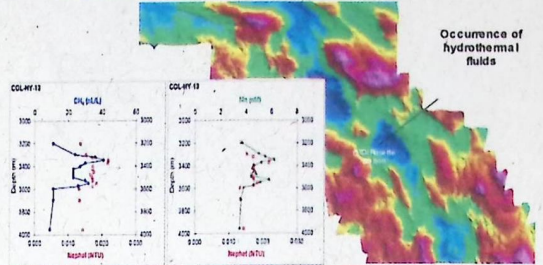
Geological Survey of Brazil - CPRM

Regional Survey!



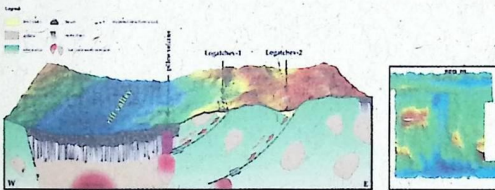
Serviço Geológico do Brasil - CPRM

Regional Survey!



Geological Survey of Brazil - CPRM

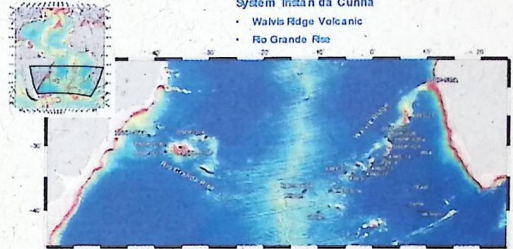
Regional Survey% definição de % sampling sites!



Geological Survey of Brazil - CPRM

System Tistan da Cunha

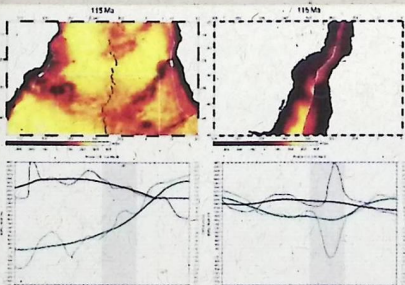
- Walvis Ridge Volcanic
- Rio Grande Rise



- DSDP (Leg 28, 73, 74 e 75)
- O'Connor et Duncan (1996)

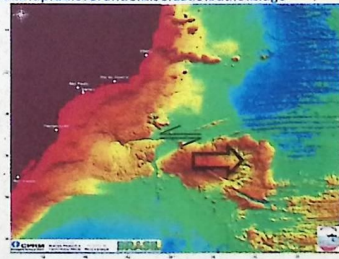
- Two most accepted hypotheses
- Interaction hot spot dorsal
 - Plata tectonics

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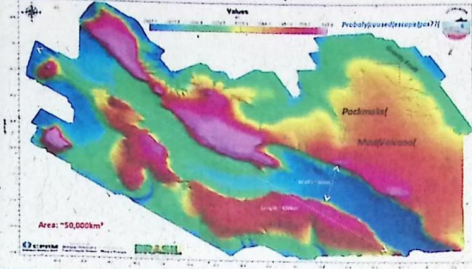
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General Map Rio Grande Rise, São Paulo Ridge



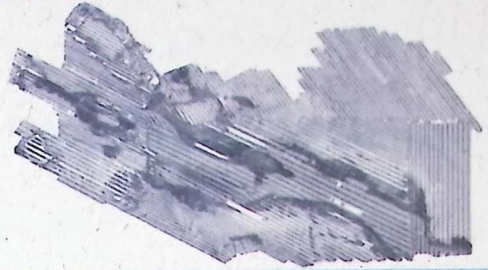
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Bathymetric Map - Rio Grande Rise - Alpha Area



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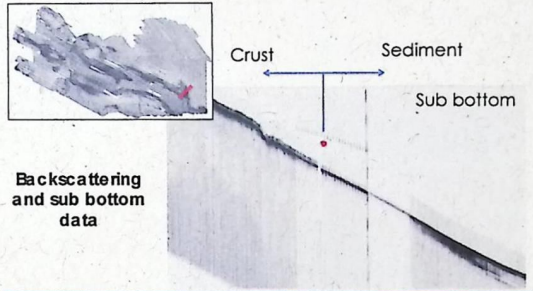
Backscattering survey



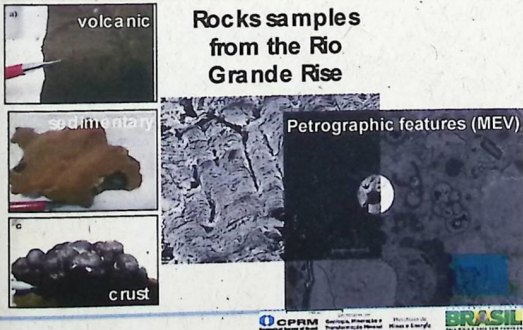
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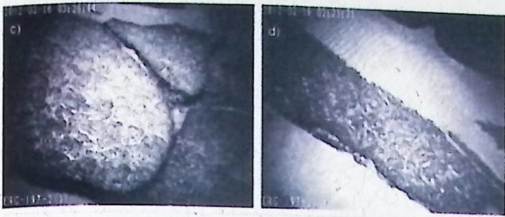
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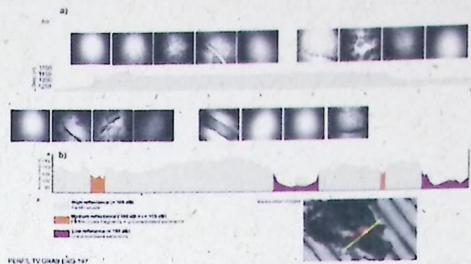
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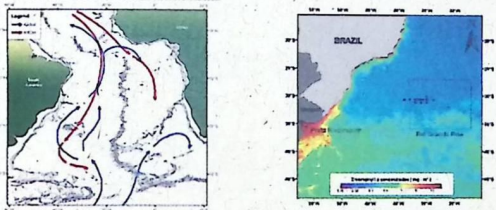
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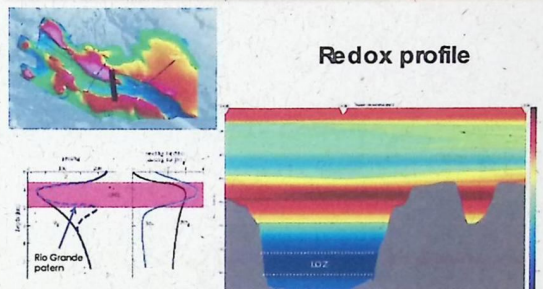
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1. Background Information: circulation – surface productivity

- Associated with deep-water circulation in SW Atlantic (Antarctic Bottom Water/ North Atlantic Deep Water)
- Influenced by oligotrophic subtropical gyre and subtropical confluence



Geological Survey of Brazil - CPRM



Geological Survey of Brazil - CPRM

Environmental Issues

1. Funding
2. Recovery of deep-sea ecosystems are more expensive
3. General public are willing to pay to preserve marine ecosystems
4. "Polluter pay" principle
5. ISA's role.



Thank you!

Climatic and geodynamic record from the sediments and suspended load of large rivers

Convenor: Franck Poltrasson

Co-Convenor: Pollana Dutra Maia

[Session Details](#) [Orals](#)

Poster Summaries & Discussions:

PSD21.10 – HS9.3/GM7.9 - Climatic and geodynamic record from the sedime[...]Thu, 01 May, 13:30–14:15 / Room R5

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Attendance Time: Thursday, 01 May, 17:30–19:00

Abstracts

Chairperson: Pollana Dutra Maia

R377 [EGU2014-15941](#)

Sr and Nd isotopes of suspended sediments from rivers of the Amazon basin
Karina Hatting, Roberto V. Santos, and Francis Sondag

R378 [EGU2014-916](#)

Estimation of erosion and sedimentation yield in the Ucayali river basin, a Peruvian tributary of the Amazon River, using ground and satellite methods.
William Santini, Jean-Michel Martinez, Jean-Loup Guyot, Raul Espinoza, Philippe Vauchel, and Waldo Lavado

R379 [EGU2014-2534](#)

A field investigation of the effect of fine sediment concentration on suspended bed material load
Jau-Yau Lu, Chih-Chiang Su, and Hsien-Li Huang

R380 [EGU2014-3094](#)

Biogeochemical process in an Amazon basin floodplain - Lago Grande de Curuai, Brazil
Jose Mauro Moura, Reynaldo Victoria, Ellese Oliveira, Jean Ometto, Luis Martinelli, and Miyuki Mitsuya

R381 [EGU2014-4432](#)

Vertical geochemical distribution of some contaminants in estuarine sediments from the Jaboatão River, Pernambuco, Northeastern Brazil.
Marta Lima, Virgínio Neumann, Maria Teresa Castro, Enjôlras Lima, Edmilson Lima, and Ricardo Silva

R382 [EGU2014-4710](#)

Neogene vegetation development in the Amazon Basin: evidence from marine well-2, Foz do Amazonas (Brazil)
Raul Bogota-Angel, Farid Chemale Junior, Roberto Davila, Emilson Soares, Ricardo Pinto, and Dermeval Do Carmo

R383 [EGU2014-7393](#)

Geochemistry and provenance of some detrital heavy minerals of alluvial sediments from Neagra S, arului River, Eastern Carpathians, Romania
Catalina Ciortescu, Ovidiu Gabriel Iancu, Dumitru Bulgariu, and Ciprian Popa

R384 [EGU2014-9571](#)

Constraining the timescales of sediment transport in lowland regions using U-series isotopes and morphometric analysis
Ashley Martin, Anthony Dosseto, Allan Chivas, and Jan-Hendrik May

R385 [EGU2014-11341](#)

Determination of sedimentary transfer time from U-series nuclides: implications from the study of the Gandak river sediments
Clio Borgia, Francois Chabaux, Christian France-Lanord, Etienne Deloule, and Eric Pelt

R386 [EGU2014-11808](#)

Geochronology of Danube Delta sediments The PN-II-RU-TE-2012-3-0351 project
Begy Robert-Csaba, Iurian Andra-Rada, Dumitru (Rusu) Oana Alexandra, Preoteasa Luminita, Simon Hedvig, Timar-Gabor Alida, and Kelemen Szabolcs

R387 [EGU2014-13542](#)

Marine intervals in Neogene fluvial deposits of western Amazonia
Melanie Boonstra, Simon Troelstra, Emmy Lammertsma, and Carina Hoorn

R388 [EGU2014-14983](#)

Provenance signatures from heavy mineral analysis and garnet geochemistry of river sediments from the southern Tauern window (Eastern Alps, Austria)
Anne Krippner, Guido Meinhold, Andrew C. Morton, and Hillmar von Eynatten

R389 [EGU2014-15546](#)

Is increasing industrialization affecting remote ecosystem health in the South Americas? Insights from ocean surface water measurements of As, Sb and Pb from a GEOTRACES transect
Dominik Weiss, Pascal Salaun, Stan Van den Berg, and Zaoshun Bi

R390 [EGU2014-15577](#)

Numerical analysis of palynological data from Neogene fluvial sediments as evidence for rainforest dynamics in western Amazonia
Sonia Salamanca, Milan van Manen, and Carina Hoorn

- R391 EGU2014-15647
Geochemistry of Amazon Basin supported by the ADCP measurements
Victor Paca, Daniel Moreira, Achilles Monteiro, and Henrique Rolg
- R392 EGU2014-10698
Geochemical proxies for weathering and provenance of Late Quaternary alluvial core-sediments from NW India
Ajit Singh, Mohd Amir, Debajyoti Paul, and Rajiv Sinha
- R393 EGU2014-4436
Iron cycling in the Amazon River Basin: the isotopic perspective
Franck Poltrasson, Lucieith Vieira, Daniel Mulholland, Patrick Seyler, Francis Sondag, and Thierry Allard
- R394 EGU2014-4354
Stratigraphic age, sedimentation rate and source rocks of the Amazon Fan
Farid Chemale Junior, Ricardo N. Ayup, Eduardo Barboza, and Candido A. V. Moura
- R395 EGU2014-15071
Source area and seasonal variation of dissolved Sr isotope composition in rivers of the Amazon basin
Roberto V. Santos, Francis Sondag, Gerard Cochonneau, Christelle Lagane, Pierre Brunet, Karina Hattingh, and Jeane G.S. Chaves
- R396 EGU2014-4941
Evidence for the control of river-water chemical stratification on the geochemistry of Amazonian floodplain sediments
Martin Roddaz, Jérôme Viers, Patricia Moreira-Turcq, Camille Blondel, Francis Sontag, Jean-Loup Guyot, and Luciane Moreira
- R397 EGU2014-16328
U-Pb dating on detrital zircon and Nd and Hf isotopes related to the provenance of siliciclastic rocks of the Amazon Basin: Implications for the origin of Proto-Amazonas River
Eilton Luiz Dantas, Valmir Silva Souza, Afonso C R Nogueira, Roberto Ventura Santos, Franck Poltrasson, Lucieith Vieira Cruz, and Anderson Mendes Conceição

Climatic and geodynamic record from the sediments and suspended load of large rivers

Convener: Franck Poitrasson

Co-Convener: Poliana Dutra Maia

[Session Details](#) [Posters](#)

Poster Summaries & Discussions:

[PSD21.10](#) – HS9.3/GM7.9 - Climatic and geodynamic record from the sedime[...]Thu, 01 M

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Thursday, 01 May 2014

Room: R4

Chairperson: Franck Poitrasson

15:30–15:45 [EGU2014-5328](#)

Geochemical behavior of rare earth elements and other trace elements

Gila Merschel, Michael Bau, and Elton Luiz Dantas

15:45–16:00 [EGU2014-7135](#)

Paleo-environment in the upper Amazon basin during early to middle

Els van Soelen, Carina Hoorn, Roberto V. Santos, Elton L. Dantas, Jaap S. Sin

16:00–16:15 [EGU2014-14070](#)

**Airborne Particulate Transport into the Amazon Basin - The Effect of A
Metal Solubility**

Dominik Weiss, Raquel Gonzales, and Shuofei Dong

16:15–16:30 [EGU2014-6069](#)

Reactive and dissolved meteoric $^{10}\text{Be}/^{9}\text{Be}$ ratios in the Amazon basin

*Hella Wittmann, Nadine Dannhaus, Friedhelm von Blanckenburg, Julien Bouch
Loup Guyot, Laurence Maurice, Naziano Filizola, Jerome Gaillardet, and Marcu*

16:30–16:45 [EGU2014-9684](#)

**Marine environmental changes at the Brazilian equatorial margin relat
during the Neogene**

*Emmy Lammertsma, Simon Troelstra, Francesca Sangiorgi, Farid Chemale Jr.,
D'Avila, Emilson Soares, and Carina Hoorn*

16:45–17:00 [EGU2014-14843](#)

Fluid dynamics, sediment transport and turbulent mixing at large conf

Mark Trevethan, Carlo Gualtieri, Naziano Filizola, and Marco Ianniruberto