

MEME'2014 - CONFERENCE PROGRAM

Tuesday 22/July

08:45 – 09:00 OPENING CERIMONY

09:00 – 09:45 PLENARY TALK P01

Earth as a complex system * Anna Carbone

09:50 – 10:15 TALK T101

Towards smart use of currents for environmental management of maritime activities * Tarmo Soomere

10:15 – 10:40 TALK T102

Multi-scale modelling of diffusive transport in compacted bentonite * Fatiha Bouchelaghem

10:40 – 10:55 COFFEE BREAK & POSTER SESSION

10:55 – 11:20 TALK T103

Satellite-based land surface data assimilation for soil moisture estimation * Gabriëlle De Lannoy, Rolf Reichle, Clara Draper, Manuela Girotto and Qing Liu

11:20 – 11:45 TALK T104

Progress in model-data fusion in environmental systems modeling: particle-MCMC simulation and approximate Bayesian computation * Jasper A. Vrugt

11:45 – 12:10 TALK T105

Modulation of polar vortex signals in the troposphere * Hans-F Graf

12:10 – 12:35 TALK T106

Diagnosis of convectively coupled equatorial waves * Carlos A.F. Marques and José M. Castanheira

12:35 – 13:40 LUNCH

13:40 – 14:25 PLENARY TALK P02

Models of non-equilibrium two-phase flow in permeable media
* S. Majid Hassanizadeh

14:30 – 14:55 TALK T107

Quantification of spontaneous patch generation in marine surface layer * Andrea Giudici and Tarmo Soomere

14:55 – 15:20 TALK T108

Modelling and control of wildfires using geometrical models of interface evolution * Adrian Bouaru and Daniel Coca

15:20 – 15:45 TALK T109

The relevance of Mathematics in Meteorology
* Cristina M. Andrade

15:45 – 16:10 TALK T110

An open access normal-mode function tool for analysis of atmospheric circulation * Nedjeljka Žagar

16:10 – 16:35 TALK T111

Statistical climatology tools based on non-Gaussian diagnostics and information theory * Carlos Pires

16:35 – 17:00 COFFEE BREAK & POSTER SESSION

17:00 – 17:25 TALK T112

Parameterization of soil hydraulic properties when using an Ensemble Kalman Filter with state and parameter updates to predict soil moisture in heterogeneous fields * Insa Neuweiler and Daniel Erdal

17:25 – 17:50 TALK T113

Simulation of fluid flow properties of carbonate rock samples using 3D micro-tomography images * Mohamed Soufiane Jouini

17:50 – 18:15 TALK T114

Simulation of multiphase fluids using Lattice Boltzmann method
* S.H. Momeni-Masuleh and Z. Mokhtari-Wernofaderani

18:15 – 18:40 TALK T115

Stochastic processes and simulation * João Corte-Real and Rong Zhang

18:40 – 19:05 TALK T116

Impacts of extratropical cyclone Stephanie assessed by a high resolution model setting * Juan Ferreira, Prabodha K. Pradhan and Margarida L.R. Liberato

21:00 – 22:00 SOCIAL EVENT “Chat & a Glass of Wine”

Wednesday 23/July

09:00 – 09:45 PLENARY TALK P03

My name is Filter, Kalman Filter * Jaime Gómez-Hernández

09:50 – 10:15 TALK T201

Numerical solution for underwater wave propagation with bottom interaction * Alaeddin Malek and Seyed Morteza Hosseini

10:15 – 10:40 TALK T202

Vessel wakes effectively transport gravel, cobbles and pebbles
* Katri Pindsoo, Tarmo Soomere, Maris Eelsalu and Hannes Tõnisson

10:40 – 10:55 COFFEE BREAK & POSTER SESSION

10:55 – 11:20 TALK T203

Combined laser scanning to monitor coastal processes * Maris Eelsalu, Kalev Julge, Erkko Grünthal, Silja Talvik, Artu Ellmann, Tarmo Soomere and Hannes Tõnisson

11:20 – 11:45 TALK T204

Peculiarities of long wave transformation waves in nonlinear hyperbolic systems (shallow-water framework) * Artem Rodin

11:45 – 12:10 TALK T205

Trend detection in extreme precipitation * Laurens de Haan, Albert Klein Tank and Cláudia Neves

12:10 – 12:35 TALK T206

Nonlinear models explain climate response to astronomical forcing over the past 1,400 ka * Eliza Condrea and Daniel Coca

12:35 – 13:30 LUNCH

13:30 BUS FROM AVEIRO TO MARITIME MUSEUM OF ÍLHAVO

14:15 – 15:00 PLENARY TALK P04

Computational challenges in glacier and ice sheet modelling
* Guillaume Jovet

15:00 – 16:00 MUSEUM & CODFISH AQUARIUM GUIDED VISIT

16:00 – 17:30 ROUND-TABLE

17:30 – 17:45 COFFEE BREAK

17:45 – 18:30 PLENARY TALK P05

Understanding the planetary life support system: next generation science in the ocean basins * John R. Delaney

18:30 BUS RETURN TO AVEIRO CENTER

19:00 – 20:00 BOAT TRIP

20:00 CONFERENCE DINNER

Thursday 24/July

09:00 – 09:45 PLENARY TALK P06

Seawater intrusion modeling and analysis * Régis Monneau

09:50 – 10:15 TALK T301

Uncertainty quantification for oil reservoir predictions: stochastic optimization and machine learning * V. Demyanov, M. Christie and L. Backhouse

10:15 – 10:40 TALK T302

Integration of dynamic data in non-stationary geostatistical modelling * Maria Helena Caeiro, Vasily Demyanov and Amilcar Soares

10:40 – 10:55 COFFEE BREAK & POSTER SESSION

10:55 – 11:20 TALK T303

Changing wave set-up climate in the urban area of Tallinn, Estonia
* Katri Pindsoo and Tarmo Soomere

11:20 – 11:45 TALK T304

Intermittency of the wave energy flux in the eastern Baltic Sea
* Maris Eelsalu and Tarmo Soomere

11:45 – 12:10 TALK T305

Characterization of complex channel reservoir structures using global stochastic block inversion * Miguel Santos, Luís Guerreiro, Amílcar Soares and Leonardo Azevedo

12:10 – 12:35 TALK T306

Geophysical data integration into subsurface Earth models
* Leonardo Azevedo, Rúben Nunes and Amílcar Soares

12:35 – 13:40 LUNCH

13:40 – 14:25 PLENARY TALK P07

Optimization of the source signal for a low-power oceanographic multichannel acoustic oceanography system * Barry Ruddick

14:30 – 14:55 TALK T307

Acoustic full waveform inversion of seismic oceanography data * Valentí Sallarès, Guillermo Bornstein, and Berta Biescas

14:55 – 15:20 TALK T308

Layering and turbulence surrounding an anticyclonic oceanic vortex: in situ observations and quasi-geostrophic numerical simulations * Bach Lien Hua, Claire Ménesguen, Sylvie Le Gentil, Richard Schopp, Bruno Marsset and Hidenori Aiki

15:20 – 15:45 TALK T309

Geostatistical time-depth conversion using seismic data * Pedro Leonardo, Maria Helena Caeiro, Luís Guerreiro and Carlos Maciel

15:45 – 16:10 TALK T310

Compositional fluid flow simulation on a reservoir containing a large amount of CO₂ * Pedro Pinto, Leonardo Azevedo and Amílcar Soares

16:10 – 16:35 COFFEE BREAK & POSTER SESSION

16:35 – 17:00 TALK T311

Understanding thermohaline mixing in the Agulhas Return Current from seismic and finestructure observations * Ana E. Rice, Jeffrey W. Book and Warren T. Wood

17:00 – 17:25 TALK T312

Geostatistical inversion of seismic oceanography data for temperature and salinity * Leonardo Azevedo, Xinghui Huang, Rúben Nunes, Luís M. Pinheiro, Maria Helena Caeiro, Haibin Song and Amílcar Soares

17:25 – 17:50 TALK T313

Exploring the shelf – slope dynamics in the Adriatic sea using numerical models & seismic oceanography * Andrea Bergamasco

17:50 – 18:15 TALK T314

Seawater density structure inverted from a simultaneous seismic and oceanographic dataset * Haibin Song, Jiangxin Chen, Luis Menezes Pinheiro and Barry Ruddick

18:15 – 18:40 TALK T315

Optimizing fairways in the Gulf of Finland using patterns of surface currents * Bert Viikmäe, Tarmo Soomere and Tomas Torsvik

09:00 – 09:45 PLENARY TALK P08

Mathematics and swimming of aquatic organisms

* Marius Tucsnak

09:50 – 10:15 TALK T401

Collaborative localization of underwater vehicle formations based on range difference measurements * João Gomes, Vasco Ludovico, João Alves and Thomas Furfaro

10:15 – 10:40 TALK T402

Potential field inversion methods with application to terrain-based navigation and target tracking * Francisco Curado Teixeira and João Quintas

10:40 – 10:55 COFFEE BREAK & POSTER SESSION

10:55 – 11:20 TALK T403

Infinite horizon optimal control for environmentally sustained management of resources in agriculture * Fernando Lobo Pereira

11:20 – 11:45 TALK T404

Optimal control of passive particles advected by two-dimensional point vortices * Teresa Grilo, Sílvio Gama and Fernando Lobo Pereira

11:45 – 12:10 TALK T405

Estimation of vehicle trafficability in terrain: application of fuzzy membership function in mathematical models * Vaclav Talhofer, Alois Hofmann and Sarka Hoskova-Mayerova

12:10 – 12:35 TALK T406

Optimal control interventions in tuberculosis-HIV/AIDS

* Cristiana J. Silva and Delfim F.M. Torres

12:35 – 13:40 LUNCH

13:40 – 14:25 PLENARY TALK P09

Cooperative navigation and motion control of multiple marine vehicles * António Pascoal

14:30 – 14:55 TALK T407

Automatic control for output reference tracking in positive systems
* Filipa N. Nogueira, Teresa Mendonça and Paula Rocha

14:55 – 15:20 TALK T408

Passive acoustics as a tool for global ocean monitoring and exploration * S.M. Jesus, O.C. Rodríguez, P. Felisberto and C. Soares

15:20 – 15:45 TALK T409

Formal methods for robotics * A. Madeira, M.A. Martins and L.S. Barbosa

15:45 – 16:10 TALK T410

Fast distributed algorithms for source localization * João Xavier

16:10 – 16:35 COFFEE BREAK & POSTER SESSION

16:35 – 17:00 TALK T411

Range-based underwater vehicle localization in the presence of unknown ocean currents: theory and experiments
* A. Pedro Aguiar

17:00 – 17:25 TALK T412

Coordination challenges in networked vehicle systems
* J. Tasso B. de Sousa and F. Lobo Pereira

17:25 – 17:50 ATLAS TALK T413

Cooperative navigation and motion control of multiple marine vehicles * A. Pascoal and A. Pedro Aguiar

17:50 – 18:15 CLOSING CERIMONY

18:15 – 19:05 ATLAS MEETING

POSTER SESSION

POST01

Stress fields in two-dimensional mantle convection model with non-Newtonian rheology * A. Bobrov, A. Baranov and N. Bobrova

POST02

Nanomaterials-based sorbents for oil spill cleanup * F.L. Wong, C.Y. Chan, Y.B. Tang, M.K. Fung, K. Berning, Y.W. Lam and C.S. Lee