

Second Brazilian Symposium on Water Waves
Federal University of Rio de Janeiro
C2 Auditorium
March 13-15, 2017

Program

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Oral presentations

Day 1, Monday, March 13

Opening

9:00-9:20 *Alex Babanin and Nelson Violante-Carvalho*

9:20-9:30 *Prof. Edson Watanabe, Director of COPPE, Federal University of Rio de Janeiro*

Session 1 Fluid Mechanics of Waves

Chair: Alex Babanin

9:30-10:00 (invited) *Leandro Farina (UFRGS, Porto Alegre)*. Interaction of water waves with a submerged thin porous disc

10:00-10:20 *Milad Shadman (Federal University of Rio de Janeiro), S.F. Estefen*. Geometrical optimization of a wave energy converter for nearshore Rio de Janeiro

10:20-10:40 *Juliana S. Ziebell (UFRGS, Porto Alegre), L. Farina*. Resuspension and transport of fine sediments in a wave boundary layer

10:40-11:00 *Matheus Vieira (Universidade Federal do Ceará), A.P. Krelling*. Wave modification by diffraction and refraction at Pecém Harbor – Ceará – Brazil.

Coffee break

Session 2 Air-Sea Interactions

Chair: Mark Donelan

11:30-12:00 (invited) *Valdir Innocentini, I.A. Goncalves*. The contribution of spume droplets to the CO₂ exchange

12:00-12:20 *Luciano P. Pezzi (Instituto Nacional de Pesquisas Espaciais, Florianopolis), M.F.L. Quadro*. South Atlantic Convergence Zone (SACZ): Case study using a regional Atmosphere-Ocean-Wave coupled numerical model

12:20-12:40 *Francisco J. Ocampo-Torres (CICESE, Mexico), P. Osuna, A. O. Hernández*. On the character of turbulence induced by non-breaking surface wave in laboratory experiments

12:40-1:00 *Ilson C.A. da Silveira*. Dynamics of the quasi-stationary meanders off Cape S~ao Tome' (22S) and Cape Frio (23S), Brazil.

Lunch

Session 3 Finite Depth and Large-Scale Dynamics

Chair: Carlos Parente

2:30-3:00 (invited) *Rodrigo Alonso (Universidad de la República, Uruguay), Sebastián Solari*. Understanding wind wave transformation processes in the Río de la Plata

3:00-3:20 *F.D.T. Barberini (Federal University of Rio de Janeiro), M. Cirano, E.S. Pereira, G.A. Cunha, M.K. Wally, M. Copertino, O.O. Moller, M. Noernberg, A. Fetter, F. Sobral, F. Amorim, A.M. Ciotti, S. Krieger, C.B. Bellini, C.A.E. Garcia*. Brazilian coastal monitoring system (SIMCOSTA).

3:20-3:40 *Iury T.S. de Sousa (Instituto Oceanográfico da Universidade de São Paulo), I.C.A. da Silveira*. Recurrent anticyclone formation and shedding in the Barreirinhas Bight

3:40-4:00 *Guilherme Franz (MARETEC, Portugal)*. Morphological modelling under the combined action of waves and currents

Coffee break

Session 4 **Extreme Waves**

Chair: Ian Young

4:30-5:00 (invited) *Mark Donelan (University of Miami, USA), A.K. Magnusson, R. Candella*. Derivation of a formula for the encounter exceedance probability distribution of rogue heights

5:00-5:20 *Alessandro Iafrati (Marine Technology Research Institute, Italy), F. De Vita, R. Verzicco*. Numerical investigation of the effects of the wind on the breaking generated by modulational instability

5:20-5:40 *A.F. Osorio (OCEANICOS, Colombia), J.D. Osorio-Cano, J.K. Delgado, M. Maceas, F.M. Toro, F. Bolaños*. Wave energy dissipation over natural structures and the interaction with extreme events

5:40-6:00 *Paulo de Tarso (Federal University of Rio de Janeiro)*. LabOceano, facility and measurements

Day Close

Day 2, Tuesday. March 14

Session 5 **Long Waves**

Chair: Leandro Farina

9:00-9:30 (invited) *Belmiro M. Castro, M. Dottori*. Continental shelf waves in the South Brazil Bight

9:30-9:50 *Rogério N. Candella (Instituto de Estudos do Mar Almirante Paulo Moreira), N. Fedorova, A.B. Rabinovich, Jadranka Sepic*. The 2014 Meteotsunami at Cassino Beach (RS, Brazil)

9:50-10:10 *Hélio M.R. Almeida (Instituto Oceanográfico da Universidade de São Paulo), I.C.A. da Silveira, W. de B. Watanabe*. Mesoscale variability of the Brazil Current in the Santos Bight: is it locally or remotely forced?

10:10-10:30 *Mario G. de Souza e Silva (Federal University of Rio de Janeiro), P.C.C. Rosman, C.F. Neves*. A second order analytical study of bichromatic and bidirectional waves

Coffee break

Session 6 **Wave Measurements**

Chair: Eduardo Palenque

11:00-11:30 (invited) *Paul A. Hwang (Naval Research Laboratory, USA)*. Surface wave observations inside tropical cyclones

11:30-11:50 *Ricardo Fabbri (Instituto Politécnico do Rio de Janeiro)*. Current techniques for the 3D photogrammetry of water waves

11:50-12:10 *Rafael de Barros Passos (Federal University of Rio de Janeiro), Á.I.W. Ramos, A.C. Fernandes*. Random wave in a wave channel

12:10-12:30 *Felipe Marques dos Santos (State University of Rio de Janeiro), A.L.C. dos Santos, L.M. Carvalho, N. Violante-Carvalho*. First-guess variation impacts over ocean waves spectrum retrieved from simulated SAR data.

Lunch

- Session 7** **Wave Measurements and Modelling** *Chair: Alessandro Iafrati*
 2:00-2:30 (invited) *Andressa D'Agostini (Centro de Hidrografia da Marinha), V. Pacheco, C.R.B. de Moraes.* Operational Wave Forecast in the Brazilian Marine Meteorological Service
 2:30-2:50 *Uggo F. de Pinho, A.V. Babanin, N. Violante-Carvalho, W. Arruda, P. de Tarso Themistocles Esperança, M. Vitola.* Experimental study on 2D modulation instability on initially 1D nonlinear and uniform steep waves in a large wave tank
 2:50-3:10 *A.F. Osorio (OCEANICOS, Colombia), R.D. Montoya, R.D., D. Pelaez, V. Saavedra.* Wave modelling in the Caribbean Sea at multiple spatial and temporal scales and their applications
 3:10-3:30 *Alexander V. Babanin (University of Melbourne, Australia) I.R. Young, W.E. Rogers, S. Zieger, S. Aijaz, Q. Liu.* Observation-based physics in the third-generation wave forecast models WAVEWATCH-III and SWAN

Coffee break

- Session 8** **Remote Sensing I** *Chair: Paco Ocampo-Torres*
 4:00-4:30 (invited) *João A. Lorenzetti, G.P. Ortiz, V. Innocentini.* Estimation of ocean surface wave height using Polarimetric SAR data. A case study at SE Brazil continental shelf
 4:30-4:50 *Jesús Portilla-Yandún (Escuela Politecnica Nacional), C. Valladares, N. Violante-Carvalho.* A hybrid physical-statistical algorithm for SAR wave spectra quality improvement
 4:50-5:10 *C.A.D. Lentini (Federal University of Bahia, Salvador), R.L. Paes, J.A. Lorenzetti.* Dual-pol decomposition of SAR observations of the ocean's surface off the mouth of the Amazon River: a preliminary study
 5:10-5:30 *Nelson Violante-Carvalho (Federal University of Rio de Janeiro).* Satellite observations of swell attenuation around oceanic islands

Conference dinner

Day 3, Wednesday, March 15

- Session 9** **Remote Sensing II** *Chair: Belmiro Castro*
 9:00-9:30 (invited) *Susanne Lehner (DLR, Germany).* Ocean Waves in variable conditions measured by SAR
 9:30-9:50 *Maria V. Yurovskaya (Marine Hydrophysical Institute, Russia), V.N. Kudryavtsev, B. Chapron, F. Collard.* Sun glitter imagery of surface waves: spectrum retrieval and wave transformation on ocean currents
 9:50-10:10 *Yuri Y. Yurovsky (Marine Hydrophysical Institute, Russia), V.N. Kudryavtsev, M.V. Yurovskaya, B. Chapron.* Short wind wave spectrum derived from dual co-polarized multi-frequency radar observations
 10:10-10:30 *G. Díaz Méndez (Centro de Investigación Científica y de Educación Superior de Ensenada, Mexico), F. Ocampo-Torres, P. Osuna, B. Esquivel Trava, M. Larrañaga Fu, L. Robles Díaz.* Spaceborne observations of wave growth under fetch-limited conditions

Coffee break

Session 10 Wave Climate

Chair: Nelson Violante-Carvalho

- 11:00-11:30 (invited) *Ian R. Young (University of Melbourne, Australia), E. Sanina.* Development and application of a global satellite database of wind and wave conditions
- 11:30-11:50 *Rodrigo K. Gomes (Federal University of Rio de Janeiro), L.A.V. Pinto, E.R. Beserra.*
- 11:50-12:10 *L.A. Dalanhese (Federal Fluminense University), T.L. Sarmento, A. Belem.* Teleconnections between the Southern Annular Mode (SAM) and the El Niño Southern Oscillation (ENSO) in offshore extreme wave events at the Southwestern Atlantic
- 12:10-12:30 *Palmer Tamzin (Met Office, United Kingdom), C. Harris, H. Lewis, J. Castillo, A. Saulter.* Sensitivity to feedbacks in a three way coupled atmosphere-ocean-wave modeling system at global and regional scales to model physics and system.

Conference Close

Visit to CAPES laboratories and Lab Oceano (limited numbers)

Poster presentations

1. VIANA, C. C. G, FERNANDES, A.M., The influence of nonlinear and friction hydrodynamic effects at the tidal wave propagation and asymmetry at the Baía de Guanabara – RJ
2. M. E. Vanzan, A. Palmeira and V. A. Godoi, WEATHER AND WAVE ANALYSES OF THE TIM MAIA BIKE PATH DISASTER
3. Mariana M. Lage and Paulo S. Polito, Equatorial waves in the Atlantic Ocean and their influence on phytoplankton
4. Júlia Kaiser, Izabel Nogueira, Nelson Violante e Fábio de Carvalho, Comparison Between Remote Sensing Altimeter and Triaxys Buoy Significant Wave Height Data in the South and Southwest Brazilian Coast.
5. Biolchi, L. G.; Ashton, A. D. & Nienhuis, J. H., The Influence of Shoreline Orientation and Wave Climates on Coastline Evolution Along the U.S. Eastern Coast
6. Martha Luiza Vilela Hermann, Marcelo de Araujo Vitola, Sergio Hamilton Sphaier, Spectral Numerical Model for Wave Tank Representation
7. Rosado, D.B.B.; Fernandes, A. M.; Calado, L.; Romano, A.L.T., Influence of stratified density fields over the Baía de Guanabara hydrodynamics: internal tides potentiality
8. Rosa, P. H. T; Colaço, G.; Nogueira I. C. M.; Parente, C. E., WAVE HINDCAST FOR THE RIO DE JANEIRO COAST DURING THE ACCIDENT EVENT OF BIKE-PATH TIM MAIA
9. Rosio Camayo and Valdir Innocentini, Wave Conditions Along the North Brazilian Coast
10. Colaço, G.; Nogueira, I. C. M.; Lourenço, T. S.; Fernandes, T. A.; Cabral, I.S.; Kaiser, J.; Delpuppo, D. F; Parente, C. E., PRELIMINARY RESULTS OF AN OPERATIONAL WAVE FORECAST SYSTEM APPLIED TO THE ILHA GUAÍBA TERMINAL AT

SEPETIBA BAY, RIO DE JANEIRO – BRAZIL

11. Nogueira, I. C. M.; Lourenço, T. S.; Cabral, I. S.; Fernandes, T. A.; Pereira, H. P. P.; Delpupo, D. F.; Parente, C. E., EVALUATION OF AN OPERATIONAL WAVE FORECAST SYSTEM APPLIED TO THE PORT OF TUBARÃO AT ESPÍRITO SANTO BAY – BRAZIL
12. Nogueira, I. C. M; Vinzon, S. B.; Parente, C. E., CONSIDERATIONS ABOUT WAVE-CURRENT INTERACTION IN SÃO MARCOS BAY – MARANHÃO – BRAZIL
13. Francisco F. Criado-Sudau, Douglas D. Nemes, Marcos N. Gallo, INFLUENCE OF THE WAVE PARAMETERS ON THE RIP CURRENTS BEHAVIOUR
14. Wagner Luiz Langer Costa; Luca Ferreira da Silveira; Antonio Henrique da Fontoura Klein, INFLUENCE OF WAVE CLIMATE AND TIDAL REGIME ON HEADLAND BY-PASSING SEDIMENTARY TRANSPORT IN THE NORTHERN PORTION OF SÃO FRANCISCO DO SUL ISLAND, SC, BRAZIL
15. Colaço, G.; Violante-Carvalho, N.; D'ávila, V. A., A LOW COST TECHNIQUE FOR WAVE MEASUREMENTS IN SHALLOW WATER
16. Eguchi, B.M.M.; Venâncio, I.D., Albino, J., SHORELINE CHANGES DUE TO WAVES EXPOSURE ALONG MAIMBÁ BEACH, ES
17. Filipe P. dos Santos, Ilson C. A. da Silveira, Glenn R. Flierl, Amit Tandon, The eddy pinch-off, vortex stretching and vertical velocity patterns in the instability waves off Cape São Tomé
18. Daniel M. C. Santos, Pedro S. Calixto and Ilson C. A. da Silveira, The Deep Western Boundary Current Vorticity Corridor off the Brazilian Eastern Coast: Isolated Rings or Waves?
19. Felipe Marques dos Santos, André Luiz Cordeiro dos Santos, Luiz Mariano Carvalho, Nelson Violante-Carvalho, AN EVALUATION ABOUT OCEAN WAVE SPECTRUM RETRIEVAL USING ERS AND SENTINEL SAR DATA
20. Bruna Reis, Luiz Landau, Luiz Paulo de Freitas Assad, Influence from subinertial waves in temperature and heat fluxes variability in Southeast Brazilian Continental Shelf
21. Douglas Rodrigues, Alessandro Filippo, Alexandre Fernandes, INVESTIGATION OF TIDE WAVE PROPAGATION ON ILHA GRANDE AND SEPETIBA BAYS: PRELIMINARY RESULTS
22. Anton Rosenhagen, Rodrigo Peixoto, Rodrigo Silva, Applications of wave effect modelling in coastal engineering
23. Gustavo Lauton, Charitha Pattiaratch, Carlos A.D. Lentini, On the shoaling of internal solitary waves on the shelf break of the Australian Northwest Shelf
24. Lavenere-Wanderley, A.A.O, Siegle, E., INFLUENCE OF CONTINENTAL SHELF WIDTH DISCONTINUITY ON EAST BRAZILIAN OFFSHORE WAVE CLIMATE BASED ON WAVEWATCH III REANALYSIS
25. Lobo, M.S.; Santos, B.S.S.; Lavenère-Wanderley, A.A. de O., SEASONAL VARIABILITY OF ACTIVE WAVES ON THE COAST OF ILHÉUS (BAHIA) STATISTICAL RE-ANALYSIS OF THE WAVEWATCH III MODEL BASED ON A THIRTY-ONE YEAR TIME SERIES
26. Rodrigo Amado Garcia Silva, Paulo Cesar Colonna Rosman, Marcos Nicolás Gallo, Numerical Modelling of Longshore Sediment Transport on a Barrier Beach (Praia Seca) in Rio de Janeiro
27. Sampaio, N.D.E.G. do A., Violante-Carvalho, N, SWAN performance investigation at Channel Islands – California, USA
28. André Lanfer Marquez; Paulo Nobre, Future projections for extreme Wind-

Generated waves for South-America

29. Bernardo Esquivel-Trava (Instituto de Investigaciones Oceanológicas, Mexico), H. Garcia-Nava, F.J. Ocampo-Torres, P. Osuna. Influence of hurricane wind field in the structure of directional wave spectra
30. Cao, Low-level machine learning for tracking curves in water wave videos