



## **Rafael Bonanata**

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### **EDUCATION**

M.Sc. Coastal and Port Engineering – University of Cantabria, Santander, Spain – 2005.

B.Sc. Oceanography – University of Vale do Itajai, Santa Catarina, Brasil – 2001.

### **QUALIFICATIONS**

Rafael Bonanata is a Senior Oceanographer for Coastal Planning & Engineering - Brazil and has ten years of experience in planning, collection, processing and interpretation of oceanographic and meteorological data. During the last years, he has been involved in many model implementations throughout the South America and US, focusing in hydrodynamic, wave propagation, coastal processes, oil spill modeling, outfall plumes simulations, flushing and water quality studies for ports and marinas and sediment dispersion generated by dredge operations and discharges. He has worked on data collection, numerical modeling studies and operational oceanography for 23 Maritime Terminals in Brazilian waters. Within Coastal Planning & Engineering he has participated in many coastal and port engineering projects, implementing the state-of-the-art computational tools such as Delft3D, Bouss2D, WWIII and SMC.

### **RELEVANT PROJECTS**

2009 – West Belle Pass, Louisiana, LA. Numerical modeling of wave propagation, currents and morphology changes Phase II: Numerical Modeling Report.

2009 – Numerical modeling of circulation pattern and impact of Imbituba Maritime Terminals expansion on the local hydrodynamic.

2009 – Numerical modeling of hydrodynamic, wave propagation and morphology changes for Capri Beach, São Francisco do Sul – Brazil.

2009 – Numerical modeling of wave propagation and wave climate analysis in shallow waters at Barra do Furado - Brazil.

2009 – Ship maneuverability along Itajaí River channel using numerical models.

2009 – Longboat Pass, Manatee County, FL. Numerical Calibration of Wave Propagation, Currents and Morphology Changes.



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2008 – Meteocean study and engineering solutions for Belmonte Terminals: dredging plan, numerical modeling and expansion alternatives.

2007 - Hydrodynamic and suspended dredged material simulation in Ba bitonga Bay, Brazil.

2007 - Oceanographic data analysis and hydrodynamic model implementation as subsidy for ship maneuvers in Port Alumar canal and mooring operation.

2007 - Dredge operation evaluation and Imbetiba Beach morphodynamic investigation by numerical model.

2006 - Hydrodynamic and suspended dredged material simulation in Paranagua Bay, Brazil.

2006 – Hydrodynamic and sediment transport modeling as subsidy for historic analysis of Paranagua and Antonina Port navigation channel.

2006 - Operational wind and wave modeling in Ilha Grande Bay for the platform P -52 mating operation.

2006 - Hydrodynamic, wave propagation and Bahia Marina Harbor effects in adjacent beaches.

2006 - Hydrodynamic and suspended sediment transport in Santos Stuary and trajectory and fates of resuspended material during the dredge activities in Cubatão Channel, Brazil.

2005 - New recreational port structures of Panxón (Galicia, NE Spain) and its effects in adjacent beaches.

2004 - Evaluation of changes in circulation and transport patterns with the Itapocú River inlet aperture and jetties implementation, Brazil.

2004 - Planning and accompaniment of bathymetric and hydrographic surveys in Mosquitos and Coqueiros River, Brazil.

2003 - Participation in data analysis, hydrodynamic and oil spill modeling for 21 PETROBRAS maritime terminals along the Brazilian coast.

2003 - Evaluation of changes in circulation and transport patterns with the COPAPE pier implementation - Barnabé Island - Brazil.

2003 - Effluent modeling of São Francisco outfall, Santa Catarina, Brazil.

2002 - Planning and execution of meteorological and oceanographic data campaigns for numerical models calibration and oil drift in 10 maritime PETROBRAS terminals throughout the Brazilian coast.



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2002 - Planning and execution of 25 hours oceanographic campaigns in the river mouth of São Francisco do Sul Bay and Acaraí River, as subsidy for the outfall implantation for the DTSUL.

2002 - 13 hours hydrographic campaigns in Arraial (São José Bay) and Coqueiros River. Activities: current measure and water samples collection for chemical analyses.

2002 - Transversal section current measure in Coqueiros River as subsidy to the outfall implantation for ALUMAR Company.

2002 - Meteorological and oceanographic data collection in the Babitonga Bay and Linguado Channel for numerical model calibration. Viability study for the Linguado Channel reopening.

2001 - Meteorological station installation and maintenance in the Offshore Platform P -XIV.

## **PUBLICATIONS**

Benedet, L, Pierro, T. P., Campbell, T., **Bonanata, R.** (2010). Offshore Oil Exploration: Probabilistic Simulations of Plume Dispersion and Potential Impacts on Beaches. 23rd National Conference on Beach Preservation Technology.

Benedet, L., Keehn, S., **Bonanata R.** (2009). Engineering Analysis, Field Measurements and Delft3D Numerical Modeling to Select Inlet Management Alternatives at Wiggins Pass, Collier County, FL. 20th National Conference on Beach Preservation Technology, February 18 -20, 2009, St. Pete Beach, Florida.

**Bonanata, R.**, Carvalho, J. L. B. (2003). Comparação entre Parâmetros de Onda Estimados no Domínio do Tempo e no Domínio da Freqüência para o Litoral Sul de Arraial do Cabo - RJ. In: V Seminário Sobre Ondas, Marés e Engenharia Oceânica – 20 a 22 de Outubro de 2003. Instituto de Estudos do Mar Almirante Paulo Moreira, Arraial do Cabo (RJ).

**Bonanata, R.**, Corrêa, M.A., Yassuda, E.A. (2003). Desenvolvimento de Técnicas para Construção de Base Batimétrica utilizada em Modelagem Hidrodinâmica, Transporte de Sedimentos e Dispersão de Poluentes para a Região do Estuário de Santos. In: III Congresso Brasileiro de Pesquisas Ambientais e Saúde – Santos (SP).

**Bonanata, R.**, Polette, M. (2001). Subsídios para a Elaboração e Aplicação de um Modelo de Análise Ambiental Urbana Rápida para Áreas Costeiras - Estudo de Caso: Balneário Camboriú - SC. In: VII Seminário Integrado de Iniciação Científica – FURB – Blumenau (SC).



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**Bonanata, R.**, Carvalho, J. L. B. (2001). Comparação entre Parâmetros de Onda Gerados no Domínio do Tempo e Frequência. In: VII Seminário Integrado de Iniciação Científica – FURB – Blumenau (SC).

**Bonanata, R.**, Polette, M. (2000). Subsídios para a Elaboração e Aplicação de um Modelo de Análise Ambiental Urbana Rápida para Áreas Costeiras - Estudo de Caso: Balneário Camboriú - SC. In: XIII Semana Nacional de Oceanografia, Itajaí (SC).