Gustavo Rabello dos Anjos

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Born on September 5th,1980 in Rio de Janeiro
Civil state: married

FORMATION

2012-2013 Massachusetts Institute of Technology (MIT)
@: http://www.mit.edu
Post-Doc. at Nuclear & Science Engineering (NSE)
Funded by: **CASL** - Consortium for Advanced Simulation of Light Water Reactor, USA
Coordinator: Jacopo BUONGIORNO
Subject: **Boiling and Condensation in Two-Phase Flows applied to Nuclear Reactors**

2008-2012 École Polytechnique Fédérale de Lausanne (EPFL)
@: http://www.epfl.ch
Ph.D. at Heat and Mass Transfer Laboratory (LTCM)
Funded by: **Nano-tera** RTD project CMOSAIC, Switzerland
Director: John R. THOME and Navid BORHANI
Thesis: **A 3D ALE Finite Element Method for Two-Phase Flows with Phase Change**

2005-2007 Federal University of Rio de Janeiro, (UFRJ / COPPE)
@: http://www.ufrj.br
Masters at Metallurgy and Materials Engineering Department
Funded by: **CNPq** - Conselho Nacional de Desenvolvimento Científico e Tecnológico, Brazil
Director: Jose PONTES and Norberto MANGIAVACCHI
Thesis: **Hydrodynamic Field Solution on Electrochemical Cells Through Finite Element Method**

2000-2005 State University of Rio de Janeiro (UERJ)
@: http://www.uerj.br
Bachelor at Mechanical Engineering Department
Funded by: **CETREINA** - Programa de Estágios e Bolsas UERJ, Brazil
Director: Mila R. AVELINO
Project: **Atmospheric Boundary Layer Simulation on Wind Tunnel**

LANGUAGES

- portuguese - mother language
- english - read, write and speak
- french - read, write and speak
- spanish - read and listen (elementary level)

INFORMATICS

Numerical languages

C/C++, python, fortran, Matlab, bash.

Operating systems

Unix/Linux, MacOS and Windows network administration.

PROFESSIONAL EXPERIENCE

2007-2008 GESAR - Group of Environmental Simulations of Hydropower Reservoirs
State University of Rio de Janeiro, Department of Mechanical Engineering, UERJ, Brazil.

Abstract: software development of a numerical simulator capable of predicting the dynamical properties of hydropower reservoirs fulfillment. The fluid flow equations were discretized through the Finite Element Method using novel and advanced techniques.

RECENT PUBLICATIONS & CONGRESSES (TWO-PHASE FLOWS)

1. ANJOS, G.R., Mangiavacchi, N., Borhani N., Thome, J.R. - A 3D ALE-FEM Method for Two-Phase Flows with Phase Change - **Heat Transfer Engineering**, 2013 (in press).

2. ANJOS, G.R., Borhani, N., Mangiavacchi, N., Thome, J.R. - A 3D ALE-FEM Method for Two-Phase Flows - **Journal of Computational Physics**, 2012 (in review).

3. ANJOS, G.R., Borhani, N., Mangiavacchi, N., Thome, J.R. - A 3D ALE- Finite Element Method for Two-Phase Flows with Phase Change. Lausanne, Switzerland **8th International Conference on Boiling and Condensation**, 2012.

4. ANJOS, G.R., Borhani, Thome, J.R. - A 3D ALE-FEM Simulation for Two-Phase Flows with Phase Change, Udine, Italy **50th European Two-Phase Flow Group Meeting**, 2012.

5. ANJOS, G.R., Borhani, N., Mangiavacchi, N., Thome, J.R. - 3D Moving Mesh Technique for Microscale Two-Phase Flows, Tel-Aviv, Israel, **49th European Two-Phase Flow Group Meeting**, 2011.

6. ANJOS, G.R., Borhani, N., Thome, J.R. - A 3D ALE-FEM Method for Microscale Two-Phase Flows, London, USA, **48th European Two-Phase Flow Group Meeting**, 2010.

RECENT PUBLICATIONS & CONGRESSES (SINGLE-PHASE FLOWS)

1. ANJOS, G.R., Mangiavacchi, N., Pontes - Rotating Disk Flow in Electrochemical Cells: A Three-Dimensional Finite Element Method Formulation, **International Journal for Numerical Methods in Fluids**, 2013 (in review).

2. Moraes, E.L.S., Oliveira, G.C.P., Anjos, G.R., Mangiavacchi, M., Pontes, J. - Second Order Semi-Lagrangian Algorithms for the Study of Hydrodynamics of Electrochemical Cells, **14th Brazilian Congress of Thermal Sciences and Engineering (ENCIT)**, Rio de Janeiro, Brazil, 2012.

3. Gaona, C.D.M, Anjos, G.R., Mangiavacchi, M., Pontes, J. - Effect of Finite Domain on von Kármán Profiles Developed in the Neighborhood of Rotating Disk Electrodes, **14th Brazilian Congress of Thermal Sciences and Engineering (ENCIT)**, Rio de Janeiro, Brazil, 2012.

4. Pontes, J., Mangiavacchi, N., ANJOS, G.R.- Estabilidade Hidrodinâmica em Células Eletroquímicas Editor: **Ciência Moderna - Modelagem Computacional em Materiais** Chapter 1, 2008.

5. ANJOS, G.R., Pontes, J., Mangiavacchi, N., Botelho, C. - FEM -DNS of Coupled Flow and Transport in Rotating-Disk Electrochemical Cells, **14th International Conference on Finite Elements in Flow Problems (FEF)**, 2007, Santa Fe, USA, 2007.

6. Pontes, J., ANJOS, G.R., Mangiavacchi, N. - Finite-element method simulation of rotating disk flow: effect of the transport of a chemical species, **14th International Conference on Finite Elements in Flow Problems (FEF)**, Santa Fe, USA, 2007.

7. Pontes, J., ANJOS, G.R., Mangiavacchi, N. - Finite-element method simulation of rota ting disk flow: effect of the transport of a chemical species, **6th International Congress on Industrial and Applied Mathematics (ICIAM)**, Zurich, Switzerland, 2007.

8. ANJOS, G.R., Mangiavacchi, N., Pontes, J. - Numerical Modelling of the hydrodynamic field coupled to the transport of chemical species through the finite-element method, **6th International Congress on Industrial and Applied Mathematics (ICIAM)**, Zurich, Switzerland, 2007.

9. Pontes, J., Mangiavacchi, N., ANJOS, G. R.- Hydrodinamic Stability In Electrochemical Cells, **X Encontro de Modelagem Computacional (EMC)**, 2007, Nova Friburgo, Brazil, 2007.

10. ANJOS, G.R., Mangiavacchi, N., Pontes, J., Botelho, C. - FEM Simulation of Coupled Flow and Scalar Transport in Hydropower Plant Reservoris, **14th International Conference on Finite Elements in Flow Problems (FEF)**, Santa Fe, USA, 2007.

11. ANJOS, G.R., Mangiavacchi, N, Pontes, J., Botelho, C. - Finite Element Method for Low Froude Number Saint-Venant Equations, **Congresso Nacional de Matemática Aplicada (CNMAC)**, Campinas - Brazil, 2006.

12. ANJOS, G.R., Mangiavacchi, N., Pontes, J., Botelho, C. - Modelagem Numérica de Escoamentos Acoplados ao Transporte de Uma Espécie Química por Elementos Finitos, **11th. Brazilian Congress of Thermal Sciences and Engineering**, Curitiba, Brazil, 2006.

13. ANJOS, G.R., Pontes, J., Mangiavacchi, N., Botelho, C. - Simulação Numérica das Equações de Navier-Stokes Acopladas ao Transporte de uma Espécie Química pelo

Método de Elementos Finitos, **Congresso Nacional de Matemática Aplicada (CNMAC)**, Campinas - Brazil, 2006.

14. ANJOS, G.R., Mangiavacchi, N., Pontes, J., Botelho, C. - Simulação Numérica das Equações de Saint-Venant Utilizando o Método dos Elementos Finitos, **16th. Simpósio de Pós Graduação em Engenharia Mecânica (POSMEC)**, Uberlândia, Brazil, 2006.

15. ANJOS, G.R., Mangiavacchi, N., Pontes, J., Botelho, C., Carvalho, L.M. - Aproximação Semi-lagrangeana para as Equações de Navier-Stokes Acopladas ao Transporte de Espécies Químicas, **Congresso Nacional de Matemática Aplicada (CNMAC)**, Campinas - Brazil, 2006.

16. Avelino, M.R., ANJOS, G.R., Kakaç, S.- Turbulent Forced Convection Air Cooling of Electronics, 10th Brazilian Congress of Thermal Engineering and Sciences, 2004, Rio de Janeiro, Brazil. **10th. Brazilian Congress of Thermal Sciences and Engineering**, Rio de Janeiro, Brazil, 2004.

17. ANJOS, G.R., Mangiavacchi, N., Avelino, M.R. - Simulação Experimental de Camada Limite Atmosférica Costeira em Túnel de Vento, **2nd Congresso Sobre Planejamento e Gestão da Zona Costeira dos Países de Expressão Portuguesa**, Recife, Brazil, 2003.

18. ANJOS, G.R., GONCALVES, W. O., Avelino, M.R. - Camadas Limite Turbulentas: Leis de Parede para superfície não uniforme 12a Semana de Iniciação Científica, Rio de Janeiro, Brazil, 2003.

WORKSHOP & SEMINARS

1. Two-phase flows in microchannels / Condensation in subcooled flow boiling - **International Workshop on Micro and Nano Structures for Phase Change Heat Transfer,** MIT, Dedham, USA, 22-23rd. April 2013

2. 3D Moving mesh technique for diabatic microscale two-phase flows - **10th. World Congress on Computational Mechanics**, USP, São Paulo, Brazil, 8-13th. July 2012.

3. A 3D ALE-FEM Simulation of Microscale Two-Phase Flows **CFD Developments**, EPFL, Lausanne, Switzerland, 12th. March 2012.

4. 3D Moving mesh simulation for Microscale Two-Phase Flows, **Workshop Energy and Environment**, UERJ – State University of Rio de Janeiro, Rio de Janeiro, Brazil, 4th – 6th July 2011.

5. 3D ALE-FEM Microscale Two-Phase Flows, **3rd. Computational Fluid Dynamic Workshop**, UERJ - Rio de Janeiro, Brazil, 3-9th. May 2011.

6. Finite Element Method applied to Two-Phase Flows. **Two-Phase Flow and Heat Transfer Numerical Workshop**, EPFL, Lausanne, Switzerland, 31st March 2011.
7. Numerical Simulation of Microscale Two-Phase Flows - An Arbitrary Lagrangian Eulerian Approach, Two-Phase Flow **Dynamics and Heat Transfer Workshop**, EPFL, Lausanne, Switzerland, 15th February 2011.

8. Finite Element and the Surface Tension Model, **1st. Computational Fluid Dynamic Workshop**, UERJ - Rio de Janeiro, Brazil, 6th. May 2009.