

PhD Marcio Arab Murad

Full Researcher

Laboratório Nacional de Computação Científica - LNCC

Av. Getúlio Vargas, 333 – Quitandinha, Petrópolis, RJ – Brazil.

Tel.: +55-24-2233-6149

Fax: +55-24-2233-6165

Email: murad@lncc.br

Education and Professional Career

1978-1983 Graduation in Mechanical Engineering at Pontifícia Universidade Católica – PUC-Rio, Rio de Janeiro, Brazil.

1984-1986 Master's degree in Mechanical Engineering at Pontifícia Universidade Católica – PUC-Rio, Rio de Janeiro, Brazil.

1986-1990 Doctorate degree in Mechanical Engineering at Pontifícia Universidade Católica – PUC-Rio, Rio de Janeiro, Brazil.

1992-1996 Postdoctoral in Soil Mechanics at Purdue University, Purdue, United State.

Commitment, Appointments and Scientific Volunteer Jobs

Since-2011 Researcher of the National Council for Scientific and Technological Development (CNPq, Level 1)

2017- Department Head of Computational Modeling LNCC

2018-2021 Project funded by Petrobras.: Computational Modeling of Vuggy Porous Media

Since 2017 Award Granted by the Research Foundation of Rio de Janeiro. Best Scientists

Since 2006 Associate Editor of the journal Computational Geosciences

Since 2017 Member of the Brazilian Society of Applied and Computational Mathematics - SBMAC

Professional Awards, Offers and Recognitions

2005 Doutor Honoris Causa, Institut National Polytechnique de Lorraine (França)

2009 Commander of the National Order of Scientific Merit, Brazilian Academy of Sciences granted by the Ministry of Science, Technology and Innovation.

2014 Best Paper presented at the Workshop of the Petrobras Network of Reservoir Simulation, Brazil.

Most important Publications (maximum 10)

(Peer reviewed journal articles / books / patents)

[1] Marcio A. Murad., Tuane Lopez, Patricia Pereira, Francisco Bezerra A three-scale index for flow in karst conduits in carbonate rocks. *Advances in Water Resources* Part of special issue: online (2020)

[2] Sidarta Lima, Marcio A. Murad and Adolfo Puime. A New Multiscale Computational Model for Low Salinity Water flooding in Clay Bearing Sandstones, *Transport In Porous Media* online (2020)

[3] Maicon Correa and Marcio A. Murad. A new sequential method for three-phase immiscible flow in poroelastic media. *Journal of Computational Physics*, vol. 373, pp 493-532, 2018.

[4] Dung. Le, Christian Moyne and Marcio A. Murad. A Three-Scale Poromechanical Model for Swelling Porous Media Incorporating Solvation Forces: Application to Enhanced Coalbed Methane Recovery *Mechanics of Materials* , vol. 131 , pp 47-60, 2019.

- [5] Aline. C. Rocha, Marcio. A. Murad, Tien D. Le. A New Model for Flow in Shale-Gas Reservoirs including Natural and Hydraulic Fractures, Computational Geosciences, vol. 21(5-6), pp. 1095—1117, 2017.
- [6] Tien. D. Le, Marcio. A. Murad, Patricia Pereira. A New Matrix/Fracture Multiscale Coupled Model for Flow in Shale-Gas Reservoirs, SPE Journal, vol. 22(1), pp. 265-288, 2017.
- [7] Tien D. Le, Christian Moyne and Marcio A. Murad. A three-scale model for ionic solute transport in swelling clays incorporating ion-ion correlation effects. Advances in Water Resources, vol. 75, pp. 31-52, 2015.
- [8] Chrstitian Moyne. And Marcio A Murad: A dual-porosity model for ionic solute transport in expansive clays Computational Geosciences,, vol. 12, pp. 47-82, 2008.
- [9] Christian Moyne and Marcio A. Murad. A Two-Scale Model for Coupled Electro-Chemo-Mechanical Phenomena and Onsager Reciprocity Relations in Expansive Clays:, Transport in Porous Media vol 62 pp 13-26 . 2006
- [10] Marcio A. Murad and Abimael Loula : Om stability and Convergence of Finite Element Approximations of Biot's Consolidation Problem: International Journal Numerical Methods in Engineering vol 37, pp 645-667 (1994)