André Luis Albuquerque Reis

Curriculum Vitæ

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Brief Description

I am currently an Adjunct Professor in the Department of Applied Geology at the Geology School of Rio de Janeiro State University. I am also leading an Exploration Geophysics Laboratory. My research focuses on developing methods for processing and interpreting potential fields. I am experienced in applying Scanning Magnetic Microscopy to characterize magnetic materials and rock samples, proposing new technologies in Paleomagnetism and Rock magnetism. I have interests in Computational and Theoretical Geophysics.

Education

2016 - 2020	**PhD in Geophysics**, Observatório Nacional (ON), Brazil
2014 - 2016	**MSc in Geophysics**, Observatório Nacional (ON), Brazil
2007 - 2012	**BSc in Physics**, Universidade do Estado do Rio de Janeiro (UERJ), Brazil

Work

2021 - on	**Adjunct Professor**, Universidade do Estado do Rio de Janeiro (UERJ), Brazil
2020 - 2021	**Postdoctoral Researcher**, Observatório Nacional (ON), Brazil
2013 - 2014	**Technician**, Universidade Estadual do Norte Fluminense (UENF), Brazil

Awards and Scholarships

2020 - 2021	**Postdoctoral Fellowship** Centro Nacional de Desenvolvimento Científico e Tecnológico (CNPq) Observatório Nacional (ON), Brazil
2016 - 2020	**PhD Scholarship** Centro Nacional de Desenvolvimento Científico e Tecnológico (CNPq) Observatório Nacional (ON), Brazil
2014 - 2016	**MSc Scholarship** Centro Nacional de Desenvolvimento Científico e Tecnológico (CNPq) Observatório Nacional (ON), Brazil
2007 - 2009	**Scientific Initiation Scholarship** Centro Nacional de Desenvolvimento Científico e Tecnológico (CNPq) Centro Brasileiro de Pesquisas Físicas (CBPF), Brazil

Educational Resources

2021 - on	**Geofísica I**,GitHub: andrelreis/geofisica1
2021 - on	**Geofísica II**, GitHub: andrelreis/geofisica2
2023 - on	**Introdução ao Processamento Sísmico**, GitHub: andrelreis/processamento-sismico
2021 - on	**Inversão de Dados Geofísicos**, GitHub: andrelreis/introducao-inversao
2021 - 2021	**Métodos Potenciais**, GitHub: andrelreis/metodos-potenciais

Projects and Grants

2024	**Métodos computacionalmente eficientes para a descrição magnética de amostras de rocha em escala micrométrica** Fundação de Amparo à Pesquisa do Rio de Janeiro (FAPERJ)

Conference Participations

2019	**Equivalent layer technique for estimating magnetization direction** SEG Annual Meeting, San Antonio, TX - USA
2017	**SED for optimal acquisition design and sensor-to-sample distance applied to scanning magnetic microscopy** Bi-annual meeting of the Latinmag, Querétaro - México
2016	**Impact of the sensor area, acquisition design and position noise on the estimation of the magnetization distribution within a rectangular rock sample** AGU Fall Meeting, San Francisco, CA - USA

Presentations

2023	**Teoria do Potencial Aplicada: uma contribuição para a descrição de rochas ígneas em bacias sedimentares** X SAGEO-UERJ, *Invited Speaker*, DOI: 10.6084/m9.figshare.24156039.v1
2020	**Inversão de dados magnéticos para estimar as três componentes do campo** Jornada PCI-ON, *Invited Speaker*, DOI: 10.6084/m9.figshare.13256657.v1
2019	**Equivalent layer technique for estimating magnetization direction** SEG Annual Meeting, *Oral presentation*, DOI: 10.6084/m9.figshare.9899321.v1
2017	**SED for optimal acquisition design and sensor-to-sample distance applied to Scanning Magnetic Microscopy** Bi-annual Meeting of the Latinmag, *Oral presentation*, DOI: 10.6084/m9.figshare.9899282.v1
2016	**Impact of the sensor area, acquisition design and position noise on the estimation of the magnetization distribution within a rectangular rock sample** AGU Fall Meeting, *Poster presentation*, DOI: 10.6084/m9.figshare.9899213.v1

Peer-reviewed Published Papers

2023 **Computational aspects of the equivalent-layer technique: review**
Oliveira Jr, VC; Takahashi, D; **Reis, ALA**; Barbosa, VCF
Frontiers in Earth Sciences, DOI: 10.3389/feart.2023.1253148

2023 **Construction of a Hall effect scanning magnetic microscope using permanent magnets for characterization of rock samples**
Araujo, JFDF; **Reis, ALA**; Yokoyama, E; Medina, CD; Osorio, FG; Luz-Lima, C; De Falco, A; Lima, CDA; Silva, JFC; Sinimbu, LIM; Gutierrez, FV; Pottker, WE; La Porta, FA; Mendoza, LAF; Tahir; Del Rosso, T; Bruno, AC
Journal of Magnetism and Magnetic Materials, DOI: 10.1016/j.jmmm.2022.170304

2022 **Spinel nanoparticles characterization by inverting scanning magnetic microscope maps**
Loreto, JM; **Reis, ALA**; Loreto, RP; Labre, C; Chaves, JF; Lima, CDA; Bruno, AC; Luz-Lima, C; Merino, ILC; Saitovitch-Baggio, E; Solorzano, G; Araujo, JFDF
Ceramics International, DOI: 10.1016/j.ceramint.2022.04.149

2021 **Detecting surface-breaking flaws with a Hall effect gradiometric sensor**
Junior, EBM; Osorio, FG; Gutierrez, FV; Del Rosso, T; Tahir; Mendoza, LAF; Luz-Lima, C; Yokoyama, E; **Reis, ALA**; Perez, G; Loreto, JM; Bruno, AC; Araujo, JFDF
Measurement, DOI: 10.1016/j.measurement.2020.108808

2020 **Generalized positivity constraint on magnetic equivalent layers**
Reis, ALA; Oliveira Jr, VC; Barbosa, VCF
Geophysics, DOI: 10.1190/GEO2019-0706.1

2019 **Characterizing Complex Mineral Structures in Thin Sections of Geological Samples with a Scanning Hall Effect Microscope**
Araujo, JFDF; **Reis, ALA**; Oliveira Jr, VC; Santo, AF; Luz-Lima, C; Yokoyama, E; Mendoza, LAF; Pereira, JMB; Bruno, AC
Sensors, DOI: 10.3390/s19071636

2019 **Scanning Magnetic Microscope Using a Gradiometric Configuration for Characterization of Rock Samples**
Araujo, JFDF; **Reis, ALA**; Correa, AAP; Yokoyama, E; Oliveira Jr, VC; Mendoza, LAF; Pacheco, MAC; Luz-Lima, C; Santo, AF; Osorio, FG; Brito, GE; Araujo, WWR; Tahir; Bruno, AC; Del Rosso, T
Materials, DOI: 10.3390/ma12244154

2016 **Estimating the magnetization distribution within rectangular rock samples**
Reis, ALA; Oliveira Jr, VC; Yokoyama, E; Bruno, AC; Pereira, JMB
Geochemistry, Geophysics, Geosystems, DOI: 10.1002/2016GC006329

Defense Committee Participations

2024	**Gelson Ferreira de Souza Junior** PhD qualifying Universidade de São Paulo
2023	**Lanna Isabely Morais Sinimbu** MSc defense Pontifícia Universidade Católica do Rio de Janeiro (PUC-Rio)
2023	**Victor Lebre Fiaux Rodrigues** MSc defense Universidade do Estado do Rio de Janeiro (UERJ)
2023	**Leonardo Campos João** MSc defense Universidade do Estado do Rio de Janeiro (UERJ)
2023	**Renato Mota Xavier de Meneses** PhD defense Universidade Federal Fluminense (UFF)
2023	**Victor Lebre Fiaux Rodrigues** MSc qualifying Universidade do Estado do Rio de Janeiro (UERJ)
2022	**Rômulo Rodrigues de Oliveira** MSc defense Universidade Federal Fluminense (UFF)
2022	**Guilherme Zequini Gomes** MSc defense Universidade do Estado do Rio de Janeiro (UERJ)
2021	**Bruno Lima de Freitas** Undergraduate thesis defense Universidade Federal Fluminense (UFF)
2020	**Allan Soares Ramalho** Undergraduate thesis defense Universidade Federal Fluminense (UFF)
2020	**Shayane Paes Gonzalez** PhD qualifying Universidade Federal Fluminense (UFF)

Technical Skills

Programming	Python, FORTRAN
Markup	Markdown, LaTeX
Graphics	InkScape, GIMP

Languages

Portuguese	Native
English	Advanced
Italian	Begginer
Spanish	Begginer