Shunguo Wang

Postdoctoral Scholar

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Employment

2018 -	**Green Scholar (postdoc)**, Scripps Institution of Oceanography
2019	**Lecturer**, Scripps Institution of Oceanography
2018	**Visiting postdoc**, Memorial University of Newfoundland Collaborators: Colin G. Farquharson, Hormoz Jahandari
2014, 2016	**EM geophysicist**, Geological Survey of Sweden Collaborators: Mehrdad Bastani, Lena Persson

Education

2013 - 2017	**Ph.D.**, Solid-Earth Geophysics, Uppsala University Advisors: Mehrdad Bastani, Thomas Kalscheuer, Alireza Malehmir, Laust Pedersen
2017	**Visiting graduate**, Scripps Institution of Oceanography Host: Steven Constable
2016	**Visiting graduate**, Leicester University Host: Max Moorkamp
2012 - 2013	**Ph.D. candidate**, Applied Geophysics, Central South University Advisor: Shikun Dai
2009 - 2012	**M.S.**, Applied Geophysics, Central South University Advisors: Bin Xiong, Jishan He
2011	**Master exchange program**, Guilin University of Technology
2005 - 2009	**B.S.**, Applied Geophysics, Central South University

Publications

[18] **Wang, S.**, Constable, S., Rychert C.A., Harmon N., 2019. A lithosphere-asthenosphere boundary and partial melt resolved using marine magnetotelluric data. *Manuscript*

[17] **Wang, S.**, Constable, S., Reyes-Ortega, V., Jahandari, H., Farquharson, C., Avilés-Esquivel, T., 2019. Two-dimensional determinant inversion of marine magnetotelluric data and a field example from the Gulf of California, Mexico. *Under review*

[16] Rychert C.A., Harmon N., Kendall J.M., Constable S., Tharimena S., **Wang S.**, Bogiatzis P., SchlaphorstD., Agius M., Hicks S., 2019. A dynamic lithosphere-asthenosphere boundary dictated by variations in melt generation and migration. *Under review*

[15] **Wang, S.**, Constable, S., Reyes-Ortega, V., Rychert, C.A., 2019. A marine magnetotelluric coast effect sensitive to the lithosphere-asthenosphere boundary. *Geophys. J. Int.*, **218**(2), 978-987. DOI:10.1093/gji/ggz202

[14] **Wang, S.**, Bastani, M., Constable, S., Kalscheuer, T., Malehmir, A., 2019. Using boat-towed radio-magnetotelluric and controlledsource audio-magnetotelluric data to resolve fracture zones at Äspö Hard Rock Laboratory site, Sweden. *Geophys. J. Int.*, **218**(2), 1008-1031. DOI:10.1093/gji/ggz162

[13] Dai, S., Zhao, D., **Wang, S.**, Xiong, B., Zhang, Q., Li, K., Chen, L., Chen, Q., 2019. Three-dimensional numerical modeling of gravity and magnetic anomaly in a mixed space-wavenumber domain. *Geophysics*, **84**(4), G41-54. DOI: 10.1190/geo2018-0491.1

[12] Li, K., Dai, S., Chen, Q, Zhang, Q., Zhao, D., **Wang, S.**, Ling, J., 2019. Three-dimensional modeling of magnetic anomaly integral solution in a mixed space-wavenumber domain. *Chinese J. of Geophys.,* **62**(11): 4437-4450, doi:10.6038/cjg2019M0362.

[11] **Wang**, **S.**, Kalscheuer, T., Bastani, M., Malehmir, A., Pedersen, L.B., Dahlin T., Meqbel, N., 2018. Joint inversion of lake-floor electrical resistivity tomography and boat-towed radio-magnetotelluric data illustrated on synthetic data and an application from the Äspö Hard Rock Laboratory site, Sweden. *Geophys. J. Int.*, **213**(1), 511-533.

[10] **Wang**, **S.**, 2017. *Joint inversion and integration of multiple geophysical data for improved models of near-surface structures*. PhD thesis, Uppsala University, Uppsala. ISBN: 978-91-513-0018-4

[9] Brodic, B., Malehmir, A., Bastani, M., Mehta, S., Juhlin, C., Lundberg, E. and **Wang, S.**, 2017. Multi-component digital-based seismic landstreamer and boat-towed radio-magnetotelluric acquisition systems for improved subsurface characterization in the urban environment. *First Break*, **35**(8), 41-47.

[8] **Wang, S.**, Malehmir, A., Bastani, M., 2016. Geophysical characterization of areas prone to quick-clay landslides using radio-magnetotelluric and seismic methods. *Tectonophysics*, **677**, 248-260.

[7] Malehmir, A., **Wang, S.**, Lamminen, J., Brodic, B., Bastani, M., Vaittinen, K., Juhlin, C., Place, J., 2015. Delineating structures controlling sandstone-hosted base-metal deposits using high-resolution multicomponent seismic and radio-magnetotelluric methods: a case study from Northern Sweden. *Geophys. Prospect.*, **63**(4), 774-797.

[6] Dai, S., **Wang, S.**, Zhang, Q., Xue, D., 2013. 2.5D forward and inversion of CSEM in frequency domain. *The Chinese Journal of Nonferrous Metals (in Chinese with English abstract)*, **23**(9), 2513-2523.

[5] **Wang, S.**, Xiong, B., Dai, S., 2013. Resolution ability to E-Ex arrangement wide field electromagnetic method studied on 1-D modeling and inversion. *Journal of Central South University (in Chinese with English abstract)*, **44**(9), 3766-3775.

[4] **Wang, S.**, 2012. *2.5D forward modeling of wide field electromagnetic method with vertical magnetic dipole source*. Master thesis (*in Chinese with English abstract*), Central South University, Changsha.

[3] **Wang, S.**, Xiong, B., Wang Y., Li C., 2012. Wave-number domain features of primary field of H-Hz arrangement wild field electromagnetic method. *Journal of Guilin University of Technology (in Chinese with English abstract)*, **32**(2), 179-183.

[2] **Wang, S.**, Xiong, B., 2012. Numerical calculation methods of wide field apparent resistivity. *Computing Techniques for Geophysical and Geochemical Exploration (in Chinese with English abstract)*, **34**(4), 380-383.

[1] **Wang, S.**, Xiong, B., 2010. Electromagnetic coupling effect in double frequencies surveys over multi-layer earth. *Computing Techniques for Geophysical and Geochemical Exploration (in Chinese with English abstract)*, **32**(6), 617-620.

Research Funding

2020 - 2021 **(In review)** Characterizing the electric properties of uppermost 100 m of the San Jacinto fault zone and its relation to seismic peak ground motion (Co-PI), $ 46,000

2018 - 2020 The Cecil H. and Ida M. Green Foundation: Develop 3D finite element modeling code for the marine magnetotelluric considering bathymetry (Co-PI), $ 60,000

2016 - 2017 Byzantinska resestip: Develop boat-towed controlled-source radio-magnetotelluric inversion with source effect (PI), $ 22,000

Field Experience

201806 Test new acoustic capacity of OBEM instrument (2 days)

201606 Aquifer delineation on Öland using radio-magnetotellurics (2 weeks)

201606 Map fracture zones using boat-towed controlled-source radio-magnetotellurics (1 week)

201603 Map fracture zones using controlled-source radio-magnetotellurics on ice (2 days)

201505 Map fracture zones using boat-towed radio-magnetotellurics and seismics (1 week)

201508 Site investigation for energy storage using seismic method (1 week)

201407 Metal deposit investigation in Kiruna using magnetotellurics (2 weeks)

201402 Test seismic landstreamer, radio-magnetotellurics, and electrical resistivity tomography methods in Stockholm (1 week)

201310 Delineate metal deposit using seismic landstreamer and radio-magnetotellurics (2 weeks)

201310 Site investigation for waste storage using audio-magnetotellurics methods (3 days)

201206 Investigate a salt deposit using wide field electromagnetic method (2 weeks, team leader)

201106 Petro-Sonde method experiment (1 week)

201010 Delineate reservoir resistivity structure using wide field electromagnetic method (2 weeks)

201009 - 11 Investigate goaf at a coal mining area using wide field electromagnetic method (2 months)

Teaching & Mentorship

2019 Environmental and Exploration Geophysics (SIO 182A, co-lecturer at Scripps Institution of Oceanography)

2014 - 2016 Applied Geophysics (TA at Uppsala University)

2015 - 2016 Electromagnetic Geophysics (TA at Uppsala University)

2011 Ground Penetrating Radar (TA at Guilin University of Technology)

2016 - 2017 Mentor of Mehdi Mohammadi Vizheh (Uppsala University)

2018 - Mentor of Valeria Reyes-Ortega (Scripps Institution of Oceanography)

Synergistic Activities

Reviewer:

Geophysics; Journal of Applied Geophysics; Journal of Environmental & Engineering Geophysics; Geoscience Frontier; Pure and Applied Geophysics; Energies; *Earth, Planets and Space; Geophysical Journal International; Journal of Ocean University of China*; *Society of Exploration Geophysicists conference*

Membership:

2019 - American Geophysical Union
2018 - International Association of Geomagnetism and Aeronomy, Division VI
2018 - Society of Exploration Geophysicists
2017 - 2018 European Association of Geoscientists and Engineers
2013 - 2017 Society of Exploration Geophysicists (vice president of Uppsala University chapter)

Attended Workshop and Conferences:

2019 SCEC Research Mentor Training Workshop
2019 Academic Laboratory Management & Leadership Symposium
2018 Electromagnetic Induction Workshop
2018 Explore Prepare Innovate Connect Postdoctoral Training Program
2017 European Association of Geoscientists and Engineers Annual Meeting (oral)
2016 Electromagnetic Induction Workshop (oral & poster)
2015 Surface-Wave Analysis Workshop; Joint Inversion in Geophysics Summer School
2014 Electromagnetic Induction Workshop (oral)

Invited Seminar/Talks:

2019 Southern University of Science and Technology
2018 Memorial University of Newfoundland
2018 Scripps Institution of Oceanography
2017 Sun Yat-Sen University
2017 Central South University

Committee Member:

2018 - Seminar organizer of Institute of Geophysics and Planetary Physics

Travel Grants & Scholarships

2018 Explore Prepare Innovate Connect Scholarship ($ 100)
2017 European Association of Geoscientists and Engineers ($ 180)
2016 Jänes Scholarship ($ 1300)
2014 Electromagnetic Induction Workshop ($ 570)
2013 - 2017 China Scholarship Council ($ 63,000)
2011 East China Mineral Exploration and Development Scholarship ($ 450)
2010 - 2011 He Jishan Foundation Scholarships ($ 900)
2009 - 2012 Central South University Scholarships ($ 4,900)
2005 - 2009 Central South University Scholarships ($ 450)