Maria Kotsi

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Highlights of Qualifications

- Research, analytical and problem solving skills honed as a PhD candidate
- Presentation and communication skills practiced continuously through conference attendances and as a teaching assistant
- Comprehensive intercultural and international experiences (Greece, The Netherlands, Switzerland, Germany, United Kingdom, Canada) gained by studying and working in global teams

Education

- Doctorate of Philosophy in Geophysics 2015–2020
  Memorial University of Newfoundland (MUN) Canada
  (Cumulative GPA: 4.00)
- IDEA LEAGUE Joint Masters in Applied Geophysics 2012–2014
  Joint degree programme offered by three different universities: TU Delft (The Netherlands), ETH Zurich (Switzerland), and RWTH Aachen (Germany)
  - September 2012 – February 2013: TU Delft
    Specialization in hydrocarbon exploration and management
  - February 2013 – July 2013: ETH Zurich
    Specialization in environmental and engineering investigations
  - October 2013 – March 2014: RWTH Aachen
    Specialization in geothermal energy exploration and management
  - March 2014 – August 2014: Deltares, Utrecht
    MSc Thesis
- Bachelor of Science in Geology (specialization in Geophysics) 2007–2012
  Aristotle University of Thessaloniki, Greece

Professional Experience

- PANGEO SUBSEA, St. John's, Newfoundland
  (Computational Geophysicist) 12/2020 - Now

- Provide advance computational geophysical support for ongoing data processing and software related projects.

- Memorial University of Newfoundland, St. John's
(PostDoctoral Fellow) 03/2020 - 11/2020

  - Work on improving the ability to solve inverse problems in small sub-domains of a region of interest by investigating whether algorithms can be sped up through the incorporation of machine learning techniques.

- Equinor Canada Ltd, St. John's, Newfoundland
(Geophysics Intern) 05/2018 - 08/2018

  - Seismic characterization of the overburden for identification and evaluation of potential geohazards in the production area.

- Geoscience Research Centre (GRC), TOTAL E&P, Aberdeen, UK
(Geophysics Intern) 05/2017 - 10/2017

  - Investigate the potential to adapt depth imaging methods to estimate 4D attributes, such as velocity change, time shifts, and strain.

- Deltares, Utrecht, The Netherlands
(Geophysics Intern) 03/2014 - 08/2014

  - Processing of marine seismic data with emphasis on the influence of variable bathymetry on generation and propagation of Scholte waves (related to MSc thesis).

- ETH Carneval Project Field Campaign, Neuhausen, Switzerland
(Field Assistant) 07/2013 - 08/2013

  - Assisting on seismic surveys to map the geometry of a postulated Quaternary valley and construct a geophysical model of the valley infill.

- Greek Institute of Geology and Mineral Exploration (IGME), Athens, Greece
(Geophysics Intern) 07/2011 - 09/2011

  - Theoretical and practical training on geophysical exploration methods such as Electrical resistivity/tomography, I.P., magnetic and gravity, field work, testing equipment and undertaking maintenance.

Teaching Experience

- Co–supervision and co–direction of a student intern 07/2019 – 09/2019
- Teaching Skills Enhancement Program (TSEP) Certificate 2018–2019
- Private Mathematics Tutor for all high school courses in the Newfoundland and Labrador English School District (NLESD) 2016 – 2019
- Teaching Assistant (TA) at Memorial University of Newfoundland (MUN) 2015–2019

Research Contributions

Peer-reviewed articles

1. Agostinetti N. P., **M. Kotsi**, and A. Malcolm, 2020. Exploration of the data space through trans-dimensional sampling: the case study of 4D seismics: *submitted to Journal of Geophysical Research*.

2. **Kotsi M.**, A. Malcolm, and G. Ely, 2020. Uncertainty quantification in time–lapse seismic imaging: a Full–Waveform approach: *Geophysical Journal International*, 222(2),1245–1263.

3. **Kotsi M.**, J. Edgar, A. Malcolm, and S. de Ridder, 2019. Combining reflection and transmission information in time–lapse velocity inversion: A new hybrid approach, *Geophysics*, 84(4), R601–R611.

Conference presentations

1. **Kotsi M.**, A. Malcolm, and G. Ely, Time-lapse uncertainty quantification using a state of the art Hamiltonian Monte Carlo method: AGU Fall Meeting, Virtual Conference, December 1-17, 2020

2. **Kotsi M.**, A. Malcolm, and G. Ely, Time–lapse Full–Waveform Inversion using Hamiltonian Monte Carlo: A proof of concept: SEG International Exposition and 90th Annual Meeting (Extended Abstract), Virtual Conference (Originally scheduled in Houston, Texas), October 11-16, 2020

3. **Kotsi M.**, A. Malcolm, and G. Ely, Time–lapse seismic inversion using Hamiltonian Monte Carlo, SIAM Conference on Imaging Science, MS49 - Advances in Uncertainty Quantification for Subsurface Inverse Problems, Virtual Conference (Originally scheduled in Toronto, Canada), July 6-17, 2020

4. **Kotsi M.**, G. Ely, and A. Malcolm, Using Fast Forward Solvers to Enable Uncertainty Quantification in Seismic Imaging, SIAM Conference on Mathematical & Computational Issues in the Geosciences, MS45 - Uncertainty Quantification for Geophysical Inverse Problems, Houston, March 11-14, 2019

5. **Kotsi M.**, A. Malcolm, and G. Ely, 4D Full-Waveform Metropolis Hastings Inversion Using a Local Acoustic Solver: SEG International Exposition and 88th Annual Meeting (Extended Abstract), Anaheim, California, October 14-19,2018

6. **Kotsi M.**, A. Malcolm, and G. Ely, Efficient Estimates of Uncertainty in Time–Lapse Seismic Imaging: SIAM Conference on Imaging Science, MS67 - Advances and new directions in seismic imaging and inversion, Bologna, Italy, June 5-8, 2018

7. **Kotsi M.** and A. Malcolm, A statistical comparison of three 4D Full-Waveform Inversion Schemes: SEG International Exposition and 87th Annual Meeting (Extended Abstract), Houston, Texas, September 24-29, 2017

8. **Kotsi M.** and A. Malcolm, Estimating the Error Distribution of Recovered Changes in Earth Properties with Full-Waveform Inversion: 13th International Conference on Mathematical and Numerical Aspects of Wave Propagation (Extended Abstract), Twin Cities, USA, May 15-19, 2017

9. **Kotsi M.** and A. Malcolm, Time–Lapse Full Waveform Inversion: How wrong are we and how do we find out? : GAC Newfoundland and Labrador Section Annual Meeting, St. John's, March, 2017

Conference posters

1. **Kotsi M.**, A. Malcolm, and G. Ely, 4D Multiparameter Adaptive Metropolis Hastings Inversion: SEG International Exposition and 89th Annual Meeting (Extended Abstract), San Antonio, Texas, September 15-20, 2019

2. **Kotsi M.**, J. Edgar, A. Malcolm, and S. de Ridder, A new strategy for higher resolution time–lapse velocity inversion: GAC Newfoundland and Labrador Section Annual Meeting, St. John's, February, 2018

3. **Kotsi M.** and A. Malcolm, Uncertainty in 4D Imaging: GAC Newfoundland and Labrador Section Annual Meeting, St. John's, February, 2016

Workshop speaker

1. **Kotsi M.**, G. Ely, and A. Malcolm, Fast Nonlinear Uncertainty Quantification: W-18: Frontier FWI: From Academic Research to Cutting Edge Industrial, Post convention Workshops, SEG, Anaheim, California, 2018

Volunteer Experience

- Special award judge at High School Technology and Science Fair 2019
- Special award judge at High School Technology and Science Fair 2018
- Let's Talk Science Outreach at MUN 2017-2018
- Graduate Representative of the Society of Exploration Geophysicists (SEG) MUN Student Chapter 2017-2018
- Judge at High School Technology and Science Fair 2017
- Treasurer of the Society of Exploration Geophysicists (SEG) MUN Student Chapter 2016-2017
- Member of the Women in Science and Engineering Graduate Student Society (WISE GSS) 2016-2017
- PhD Representative for Earth Sciences Graduate Matters Committee 2015-2016

- 40th Annual Newfoundland and Labrador Folk Festival 2016
- Mineral Resources Review 2015
- 39th Annual Newfoundland and Labrador Folk Festival 2015

Honours and Awards

- SIAM Student Travel Award for the SIAM Conference on Imaging Science (IS20) 2020
- Canadian Society of Exploration Geophysicists (CSEG) University Scholarship 2019
- Fellow of the School of Graduate Studies 2019
- SEG/ExxonMobil Student Education Program 2018
- SIAM IS 18 Student/Post-doc Travel Award 2017
- Chevron Canada Limited Rising Star Award 2017
- Chevron Canada Limited Rising Star Award 2016
- The Dr. James A. Wright Memorial Scholarship in Earth Sciences 2016
- School of Graduate Studies (SGS) Fellowship 2015
- Best Intern, School of Geology, AUTH 2011

Language Skills

- Fluent in English and Greek

***** References available upon request *****