

# Dr Augustin Marignier CV

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## Publications

- **A. Marignier** (2023). PxMCMC: A Python package for proximal Markov Chain Monte Carlo. *JOSS*
- **A. Marignier**, T. D. Kitching, J. D. McEwen, A. M. G. Ferreira (2023). Sparse Bayesian mass-mapping using trans-dimensional MCMC. *OJA*
- **A. Marignier** (2023). From Dark Matter to the Earth's Deep Interior: There and Back Again. *Doctoral Thesis (Ph.D)*, UCL
- **A. Marignier**, J. D. McEwen, A. M. G. Ferreira, T. D. Kitching (2023). Posterior sampling for inverse imaging problems on the sphere in seismology and cosmology. *RASTI*
- W. Sturgeon, A. M. G. Ferreira, L. Schardong, **A. Marignier** (2022). Crustal structure of the Western U.S. from Rayleigh and Love wave amplification data. *JGR: Solid Earth*, under review
- O. J. Cobb, C. G. R. Wallis, A. N. Mavor-Parker, **A. Marignier**, M. A. Price, M. d'Avezac, J. D. McEwen (2021). Efficient Generalized Spherical CNNs. *ICLR*
- **A. Marignier**, A. M. G. Ferreira, T. D. Kitching (2020). The Probability of Mantle Plumes in Global Tomographic Models. *G3*
- A. M. G. Ferreira, **A. Marignier**, J. Attanyake, M. Frietsch, A. Berbellini (2020). Crustal structure of the Azores Archipelago from Rayleigh wave ellipticity data. *GJI*

## Professional History

Jan 23 - Dec 23 PDRA Seismology, Research School of Earth Sciences, ANU  
Sep 22 - Dec 22 PDRA Seismology, Department of Earth Sciences, UCL  
Jun 22 Scientist, Land seismometer deployment, Azores  
Jun 21 - Aug 21 Scientist, UPFLOW Ocean-bottom Seismometer deployment, Atlantic Ocean  
Oct 19 - May 20 Machine Learning Intern, KageNova Ltd.  
Oct 18 - Sep 22 PhD Student, Centre for Doctoral Training in Data Intensive Science, UCL

## Talks

- Proximal Markov chain Monte Carlo: Towards building a sparse Earth model  
*SSA Virtual Tomography Sessions*. 02/02/21
- Proximal Markov Chain Monte Carlo: Towards Building a Sparse Earth Model  
*AGU Fall Meeting 2021* - Winner of the AGU Seismology Section Outstanding Student Presentation Award\*\*. 13/12/21
- Cosmological mass-mapping with trans-dimensional trees  
*3rd IMA Conference on Inverse Problems from Theory to Application*. 04/05/22

## Teaching

2021 - 2022 Machine Learning with Big Data, UCL  
2019 - 2021 Seismology II, UCL  
2019 - 2021 Field Geophysics, UCL  
2017 - 2021 MATLAB, UCL

## Journal Peer Reviews

- Geophysical Journal International
- Journal of Geophysical Research - Solid Earth
- Physics of the Earth and Planetary Interiors ## Education

2022 PhD Data Intensive Science, University College London  
*From Dark Matter to the Earth's Deep Interior: There and Back Again*  
Supervised by Prof Ana Ferreira and Prof Thomas Kitching  
Submitted 30/9/22, Defended 6/12/22

2018 MSci Geophysics, University College London  
First Class Honours

*Rayleigh wave ellipticity inversion for crustal velocity structure*  
Supervised by Prof Ana Ferreira