

# M.Sc. Batmagnai Erdenechimeg

Curriculum Vitae



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## *Personal Data*

**Given Name:** Batmagnai

**Sure Name:** Erdenechimeg

**Date of Birth:** 19 March 1992

**Citizenship:** Mongolian

## *Education*

**2016 – 2018**      **Master of Science in Applied Mathematics, Ulaanbaatar State University (Mongolia).**

MSc. thesis: “The signal processing of the magnetotellurics”.

Research focus:

- Magnetotellurics theory
- Optimization and numerical methods

**2014 – 2016**      **Orientation years: Institute of Astronomy and Geophysics, Ulaanbaatar State University (Mongolia).**

Research focus:

- Geomagnetism
- Theoretical physics
- Mathematical programming

**2010 – 2014**      **Bachelor of Science in Geophysics, The National University of Mongolia.**

BSc. thesis: “Depth estimation of magnetic anomaly”

Research focus:

- Theoretical physics
- Seismology; Participation in a two years seismic field campaign in different provinces of Mongolia.

## *Work Experience*

Since      12/2018      **Institute of Geophysics, Geothermal Energy and Geofluids group, ETH Zurich.** Proposed PhD student for SNF R4D project “Development of a geoscientific framework for geothermal exploration and utilization in Mongolia”

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|-------------------|---|
| 02/2015 – 11/2018 | <b>Institute of Astronomy and Geophysics, Mongolian Academy of Sciences.</b> Deep electromagnetic studies of the Earth.   |
| 04/2016 – 08/2018 | <b>Imaging mantle beneath Hangai and Altai mountains in Mongolia.</b> Magnetotelluric field campaign with ETH Zurich (Switzerland) and University of Munster (Germany).                                 |
| 08/2014 – 02/2015 | <b>Institute of Astronomy and Geophysics, Mongolian Academy of Sciences.</b> Participation in a seismic field campaign. Development of numerical codes for seismic data processing and hazard analysis. |
| 06/2013 – 10/2013 | <b>Institute of Astronomy and Geophysics, Mongolian Academy of Sciences.</b> Participation in a seismic field campaign. Seismic data processing.  |

### Language Skills

- Mongolian: Mother tongue
- English: Advanced level
- Russian: Basic knowledge

### Publications

#### ----- Papers -----

1. Comeau, M.J. J.S. Käüfl, M. Becken, A. Kuvshinov, A.V. Grayver, J. Kamm, S. Demberel, U. Sukhbaatar, **Batmagnai E.**, “*Evidence for fluid and melt generation in response to an asthenospheric upwelling beneath the Hangai Dome, Mongolia*”, Earth and Planetary Science Letters, Volume 487, 1 April 2018, Pages 201- 209.
2. **Batmagnai E.**, Sukhbaatar U. “*Data processing of Lemi-418 magnetotelluric system of MAG-MTT magnetic observatory*”, Geophysics and Astronomy Journal, 2017, № 4, 84-92.
3. **Batmagnai E.**, Sukhbaatar U. “*The method of signal processing of the magnetotellurics*”, Khurel togoot journal of Science academy, 2016.
4. Sukhbaatar U., **Batmagnai E.** “*The Hilbert-Huang and EMD method for processing of magnetic data*”, Physics journal of NUM, 2015 № 21 440.

#### ----- Conference contributions -----

1. **Batmagnai E.**, F.Samrock, S.Demberel, et al. “*Estimation of Geothermal reservoir using Magnetotelluric methods*”, Science & Technology 2018, Ulaanbaatar, Mongolia; 2018
2. **Batmagnai E.**, M.J. Comeau, J. Käüfl, et al. “*The magnetotelluric studies (2016-2018) in the Hangai Dome*”. *Kick-off meeting SNF R4D project*, 24<sup>th</sup>-26<sup>th</sup> September 2018, Ulaanbaatar, Mongolia; 09/2018
3. Käüfl J., A.V. Grayver, M.J. Comeau, A.V. Kuvshinov, M. Becken, J. Kamm, **E. Batmagnai**, S. Demberel., “*Magnetotelluric 3-D inversion to understand the Hangai Mountains uplift in Mongolia, using a high-order FEM code and adaptive meshes.*”, 24<sup>th</sup> EM Induction Workshop, Helsingør, Denmark; 08/2018
4. Becken M., M. J. Comeau, J. Käüfl, A. Kuvshinov, A. Grayver, J. Kamm, **E. Batmagnai** S. Demberel., “*Fluidized pockets in the lower crust beneath the Bulnay*

*strike-slip fault system at the northern edge of the intra-continental Hangai high-plateau, Mongolia*”, 24<sup>th</sup> EM Induction Workshop, Helsingør, Denmark; 08/2018

5. Comeau, J., J. Käüfl, M. Becken, A. Kuvshinov, A. Grayver, J. Kamm, **E. Batmagnai**, S. Demberel., “*Electrical resistivity models reveal mineralization and fault systems in the Vallue of the Lakes, south central Mongolia*”, 24<sup>th</sup> EM Induction Workshop, Helsingør, Denmark; 08/2018
6. Comeau, J., J. Käüfl, M. Becken, A. Kuvshinov, A. Grayver, J. Kamm, **E. Batmagnai**, S. Demberel., “*Electrical resistivity models give evidence for crustal boundaries, a weak lower crust, and an asthenospheric upwelling beneath the Hangai Dome, Mongolia*”, 24<sup>th</sup> EM Induction Workshop, Helsingør, Denmark: 08/2018
7. **Batmagnai E.**, “*Utilization of Magnetotelluric survey for the Geothermal exploration*”, Ulaanbaatar-Inovation workshop; Ulaanbaatar, Mongolia; 06/2018
8. Matthew Joseph Comeau, Michael Becken, Johannes Käüfl, Alexey Kuvshinov, Sodnomsambuu Demberel, and the **HANGAI WORKING GROUP.**, Images of intraplate volcanism: “The upper crustal structure below Tariat volcanic zone, Mongolia, imaged with magnetotellurics”. EUROPEAN GEOSCIENCES UNION 2018 Vienna, Austria; 04/2018
9. Matthew Joseph Comeau, M.Becken, J. Käüfl, A. Kuvshinov, A. Grayver, S. Demberel, **E. Batmagnai**, S. Tserendug, T. Nasan-Ochir, E. Eldev-Ochir., “*The electrical resistivity structure of central Mongolia observed with magnetotelluric data*”, Proceedings of the 27th Schmucker-Weidelt Colloquium for Electromagnetic Depth Research, Breklum, Germany; 10/2017
10. Matthew J Comeau, Michael Becken, Johannes S Kaeufl, Alexey Kuvshinov, Jochen Kamm, Alexander Grayver, Sodnomsambuu Demberel, Usnikh Sukhbaatar, **Erdenechimeg Batmagnai**, Shoovdor Tserendug, Tumen Nasan-Ochir., “*Electrical resistivity structure beneath the Hangai Dome, Mongolia: intraplate volcanism and deformation imaged with magnetotelluric data*” 2017 AGU Fall Meeting, New Orleans, USA; 08/2017
11. Matthew Comeau, Johannes Käüfl, Michael Becken, Alexey Kuvshinov, Sodnomsambuu Demberel, Usnikh Sukhbaatar, **Erdenechimeg Batmagnai**, Shoovdor Tserendug, Ochir Nasan, “*Electrical structure beneath the Hangai Dome, Mongolia, from magnetotelluric data: Evidence for lithospheric melt*”, EUROPEAN GEOSCIENCES UNION 2017, Vienna, Austria; 04/2017
12. Matthew Comeau, Johannes Käüfl, Michael Becken, Alexey Kuvshinov, Sodnomsambuu Demberel Usnikh Sukhbaatar, **Erdenechimeg Batmagnai**, Shoovdor Tserendug, and Ochir Nasan. “*Electrical structure beneath the Hangai Dome, Mongolia, from magnetotelluric data*”, EUROPEAN GEOSCIENCES UNION 2017, Vienna, Austria; 04/2017
13. **Batmagnai E.**, “*Status of long period magnetic and electric measurement in Mongolia*”, Hangai MT study project meeting 2017., ETH Zurich, Switzerland; 04/2017
14. **Batmagnai E.**, Sukhbaatar U. “*Estimation of the lithospheric magnetic field used by WDMAM data sets*”, IAG conference, 2016., Ulaanbaatar; 11/2016