YI
ZHANG

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Skills Summary

- Advanced scientific programing using C++ and Python *et al.*;
- Parallel programing using OpenMP, Open MPI and CUDA.
- Scientific data visualization with Paraview, Gmsh, GMT and Matplotlib *et al.*;
- Forward and inversion techniques of gravitational and magnetic field;
- Geophysical data processing.

Education and appointments

MD-PhD student

Institute of Geophysics and Geomatics, China University of Geosciences (CUG-Wuhan); 2013-present.

Major: theoretical geophysics.

Visiting scholar

Earthquake Science Center, United States Geological Survey (Menlo Park); 2016-present.

Research interests: crustal and upper mantle's density structure derived from gravity and other data.

Graduate teaching assistant

Institute of Geophysics and Geomatics, CUG-Wuhan; 2014-2015.

Course: Gravitational field prospecting

Bachelor of Science

Institute of Geophysics and Geomatics, CUG-Wuhan; 2008-2012.

Major: theoretical and applied geophysics.

Experience in scientific research projects

- 2015 - 2016, Inversion theory of large-scale magnetic distribution of the lithosphere (Chinese Natural Science for Youth Foundation);
- 2013 - 2015, 3D multi-density structure of the lunar lithosphere: implication to the evolution of the crust and the mantle of the Moon (Chinese Natural Science for Youth Foundation);

- 2012 - 2013, International cooperation with Colorado School of Mines and Geoscience Australia Development of algorithms for inverting large-scale gravity and magnetic data in spherical coordinates.

Individual Rewards

- 2013.12 Second Prize of CUG-hosted students' science & technology report competition;
- 2014.12 The 2014 Chinese Geophysical Society Annual Meeting, Outstanding student report award;
- 2016.05 Full scholarship from China Scholarship Council for abroad academic visiting;
- 2017.10 China national scholarship for outstanding PhD student.

Participate in academic activities

- 2014.10 in Beijing, China. The 2014 Chinese Geophysical Society Annual Meeting, oral presentation;
- 2015.10 in Beijing, China. The 2015 Chinese Geophysical Society Annual Meeting, oral presentation;
- 2015.12 in San Francisco, CA, USA. The AGU Fall Meeting, poster presentation;
- 2016.12 in San Francisco, CA, USA. The AGU Fall Meeting;
- 2017.01 in Huston, TX, USA. Math + X Symposium on Seismology and Inverse Problems;
- 2017.06 in South Hardly, MA, USA. Gordon Research Conferences: Interior of the Earth, poster presentation;
- 2017.12 in New Orleans, LA, USA. The AGU Fall Meeting.

Publications

Zhang, Y., & Chen, C. (2018). Forward calculation of gravity and its gradient using polyhedral representation of density interfaces: an application of spherical or ellipsoidal topographic gravity effect. Journal of Geodesy, 92(2), 205-218. https://doi.org/10.1007/s00190-017-1057-3

Zhang, Y., Zhang, SX., Liang, Q. & Chen, C. (2015). Application of boundary identifying technologies using gravity and magnetic maps in 3-D geological mapping of the Western Junggar Area. Earth Science, 40(3), 431~440 (in Chinese).

Zhang, Y. & Chen, C. Forward modeling method of potential fields based on 3-D Delaunay subdivision. The 2015 Chinese Geophysical Society Annual Meeting, 2015, Beijing, China. (in Chinese).

Zhang, Y., Chen, C., Du, JS., Shun, SD. & Liang, Q. Forward modelling method of potential fields using unstructured grid in the Cartesian and spherical coordinates. The 2015 AGU Fall Meeting, 2015, San Francisco, CA, USA.