

## Special Issue

# Numerical Methods of Geophysical Fields Inversion

### Message from the Guest Editor

The overwhelming volume of modern knowledge regarding the Earth's interior became available due to the results of geophysical observations, on or near the surface. Inversion of geophysical fields within the framework of the corresponding mathematical model provides the most complete knowledge about subsurface distributions of desired parameters. However, it is necessary to stress, that we could never describe a real geological medium using such an abstract object as a system of partial differential equations. Hence, the proper mathematical model is necessary in providing reliable results of geophysical inversion. It is worth mentioning that the emergence and development of such a direction of modern mathematics as inverse and ill-posed problems originates in geophysics. The key position in modern theory and numerical methods of inverse and ill-posed problems takes nonlinear least squares and various regularization techniques. It is these two components form the basis of modern methods of geophysical fields inversion which is dedicated to this issue.

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### Guest Editor

Prof. Dr. Vladimir A. Cheverda

Department of Computational Methods in Geophysics, Trofimuk Institute of Petroleum Geology and Geophysics of Siberian Branch of Russian Academy of Sciences, 3, prosp. Koptyuga, 630090 Novosibirsk, Russia

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## Geosciences

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*Geosciences*  
Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[geosciences@mdpi.com](mailto:geosciences@mdpi.com)

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### Message from the Editor-in-Chief

Understanding the Earth's origin and its bio-geological evolution, the multiple implications of the geosciences (as a coherent set of interconnected disciplines), and the sociocultural and ethical interdisciplinary approaches, will be crucial for a better understanding of Nature, and also for undertaking scientifically based political decisions.

We are committed to drive *Geosciences* to a position in which it is recognized for its high-quality, cutting-edge research and scientific influence, and strongly encourage and invite your participation and manuscripts.

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### Editor-in-Chief

Prof. Dr. Alberto G. Fairén

1. Centro de Astrobiología, CSIC-INTA, Madrid, Spain
2. Department of Astronomy, Cornell University, Ithaca, NY, USA

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