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Special Issue on Modern Geophysical Advances

Call for Papers – Journal of Sciences, Islamic Republic of Iran (JSIRI)

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Submission Deadline: December 30, 2026

Guest Editor: Zaher-Hossein Shomali, Institute of Geophysics, University of Tehran

Dear Colleagues,

We are pleased to invite you to submit your manuscripts for special Issue on Geology/Geophyscs.

1. Introduction and Scope

Understanding the mechanics of earthquakes and the deformation of the crust and lithosphere remains a major challenge in solid Earth geophysics here in Iran. The ongoing convergence between the Arabian and Eurasian plates has produced the highly active tectonic mosaic of the Iranian Plateau; comprising the Zagros, Alborz, and Kopet Dagh mountain belts alongside the Makran subduction zone. This makes Iran a natural laboratory for geophysical research.

Recent progress in computational geophysics, especially the use of artificial intelligence, AI, and the deployment of dense sensor arrays, has transformed our ability to analyze geophysical data. This special issue is intended to bridge the gap between classical geophysical methods and emerging technologies such as machine learning.

We invite contributions that address fundamental questions about earthquake physics, crustal deformation, and hazard mitigation; with a particular emphasis on regional settings in Iran as well as comparative global case studies. While preparing the manuscript, please keep in mind that the Journal of Sciences, University of Tehran aims to serve the broader scientific community, including experts from various relevant fields such as geophysics.

2. Keywords and Topics of Interest

We welcome original research articles, review papers, and short communications on the following topics:

- **Geological Setting of Iran:** Tectonic studies, fault systems, and seismotectonic provinces,
- **Geophysical Investigations:** Gravity, magnetic, magnetotelluric, and resistivity studies for subsurface imaging,
- **Seismic and Seismological Studies:** Earthquake source mechanisms, seismic tomography, aftershock analysis, seismic hazard assessment, and seismic anisotropy,



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- **Earthquake Early Warning Systems (EEWS):** Real-time seismic processing, recent developments in EEWS, and their application to seismic hazard mitigation,
- **Seismic Ambient Noise & Urban Seismology:** Studies using ambient noise for imaging near-surface structures, and the use of Distributed Acoustic Sensing (DAS) for monitoring urban vibrations and traffic noise,
- **AI Applications in Geophysics/Seismology:** Geophysical inversion and machine learning applications for phase detection, earthquake magnitude/depth estimation and location, and ground-shaking prediction,

3. Submission Guidelines

All manuscripts will go through the standard double-blind peer-review process of the Journal of Sciences, University of Tehran. Regarding manuscript format, authors are encouraged to follow the "*Guide for Authors*" available on the journal's website. In your cover letter, please clearly state that your manuscript is submitted for the Special Issue on "*Modern Geophysical Advances*." For any inquiries about the scope, please contact: shomali@ut.ac.ir

We look forward to receiving your valuable contributions.

Dr Zaher-Hossein Shomali, Guess Editor for Special Issue on Geology

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