



Symmetry, Asymmetry and Nonlinearity in Geomechanics

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Message from the Guest Editors

Dear Colleagues,

Geomechanics is a branch of geology that focuses on the shapes, fabrics and physical properties of geological bodies as well as their responses to external forces. It mainly covers the strength, deformation, cracking, stability and destruction of geo-materials and geological bodies, and provides a crucial theoretical basis for geotechnical engineering. Geomechanics has a wide range of applications in fields such as mining, oil drilling, tunneling, water conservancy and geological disaster prevention and mitigation.

In geomechanics-related engineering and scientific problems, research objects may have symmetrical geometries, such as tunnels' cross-sections and the uniaxial compression specimens of rocks. The asymmetrical geometries and structures of research objects are also frequently encountered, such as asymmetrical geological fabrics and asymmetrical microscopic structures of geo-materials. Similarly, external loads can be either symmetric or asymmetric, while the mechanical behavior of geo-materials often displays strong nonlinearity and asymmetry...





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Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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