



mathematics



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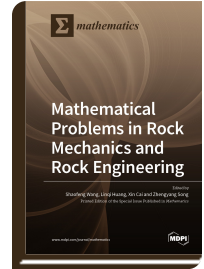
Mathematical Problems in Rock Mechanics and Rock Engineering

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With increasing requirements for energy, resources and space, rock engineering projects are being constructed more often and are operated in large-scale environments with complex geology. Meanwhile, rock failures and rock instabilities occur more frequently, and severely threaten the safety and stability of rock engineering projects. It is well-recognized that rock has multi-scale structures and involves multi-scale fracture processes. Meanwhile, rocks are commonly subjected simultaneously to complex static stress and strong dynamic disturbance, providing a hotbed for the occurrence of rock failures. In addition, there are many multi-physics coupling processes in a rock mass. It is still difficult to understand these rock mechanics and characterize rock behavior during complex stress conditions, multi-physics processes, and multi-scale changes. Therefore, our understanding of rock mechanics and the prevention and control of failure and instability in rock engineering needs to be furthered. The primary aim of this Special Issue “Mathematical Problems in Rock Mechanics and Rock Engineering” is to bring together original research discussing innovative efforts regarding in situ observations, laboratory experiments and theoretical, numerical, and big-data-based methods to overcome the mathematical problems related to rock mechanics and rock engineering. It includes 12 manuscripts that illustrate the valuable efforts for addressing mathematical problems in rock mechanics and rock engineering.



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