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This book contains the best papers accepted for presentation at the 3rd Springer Conference of the Arabian Journal of Geosciences (CAJG-3). The book is divided into three parts to distinguish research studies from the fields of (1) geological and geotechnical engineering, (2) geomechanical studies based on numerical and analytical methods, and (3) geo-informatics and remote sensing. The content of these papers provides new scientific knowledge for further understanding on landslides, new stabilization techniques, importance of geophysics for engineering geology investigations as well as new empirical approaches for easily predicting some physical and hydrogeomechanical properties of geomaterials. It also sheds the light on usage of different remote sensing technologies, mapping techniques in a geographic information systems environment along with some advanced signal processing, and deep learning approaches. The book is of interest to all researchers. practitioners, and students in the fields of geological and mining engineering, geotechnical engineering, hydrogeomechanics, engineering geology, geotechnologies, groundwater and natural hazards, and analyses of some emerging earth processes and environmental variabilities.