This book provides a concise overview of the recent development in geocomputing, which covers the advanced computational theory, model construction, results visualization, high performance software development on supercomputers, and their applications in simulating geodynamics, crustal dynamics, earthquakes, tsunami and rock physics spanning different temporal and spatial scales of geosciences. The book is composed of 8 chapters written by 35 authors from 6 countries – Australia, China, Germany, Japan, Switzerland and the United States, which reflected the current state-of-the-art achievements and the future research direction in the field.

A DVD-ROM is attached together with this book for the image and animation files of the amazing simulation results.

The scientists, researchers and graduate students in geophysics, geology, geochemistry, high performance computing as well as environmental and mining engineers will benefit from this book, especially in the advanced geocomputing and its applications.