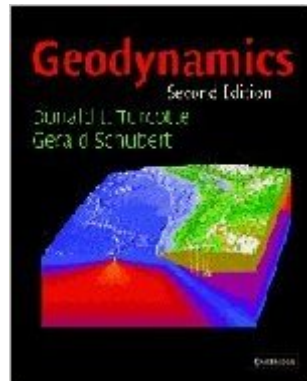


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# Geodynamics



## Synopsis

First published in 1982, Don Turcotte and Jerry Schubert's *Geodynamics* became a classic textbook for several generations of students of geophysics and geology. The authors bring this text completely up-to-date in this second edition. Important additions include a chapter on chemical geodynamics, an updated coverage of comparative planetology based on recent planetary missions, and a variety of other new topics. *Geodynamics* provides the fundamentals necessary for an understanding of the workings of the solid earth, describing the mechanics of earthquakes, volcanic eruptions, and mountain building in the context of the role of mantle convection and plate tectonics. Observations such as the earth's gravity field, surface heat flow, distribution of earthquakes, surface stresses and strains, and distribution of elements are discussed.

## Book Information

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## Customer Reviews

"Geodynamics" has been a classic text in the field of, well, Geodynamics since the first edition came out, and it remains a brave attempt to squeeze a large amount of detail into one volume. In many ways however, this attempt is misguided. The material suffers from overcrowding in many chapters, and different approaches are used to solve the same problem, giving wildly different answers, with no attempt made to qualify which method is accepted as the most realistic. A fairly comprehensive set of questions are liberally sprinkled throughout each chapter, although the one-number answers at the back of the book are usually insufficient, and some brief explanation would greatly enhance user-friendliness. The main problem I found with this textbook however, is the inability to link the numerical methods presented with real world situations. The complexities of plate deformation for

example are reduced to a set of sections on beam-bending, with little or no attempt at the end to draw the lessons learnt from the exercise back into some meaningful discussion of how the earth behaves. This is a common failure of analytical approaches to Earth Science problems, that the construction of a mathematical framework becomes an end in itself, and that real data are ignored or manipulated to shoehorn them into the predictions of the model. "Geodynamics" is a good summary of the techniques used to try to understand the workings of the earth, but often leaves one with a hollow feeling that one hasn't really learned anything about the earth itself at the end of each chapter.

Turcotte and Schubert updated their 1982 edition to account for new developments in geoscience, and the result is the most comprehensive textbook on geophysics for the upper level undergraduate/graduate student. It is an outstanding reference, and is clear and concise in its treatment of a variety of geophysical phenomena. Stress/Strain, Elasticity and Flexure, Fluid Mechanics, Heat Transfer, Gravity, Rock Rheology, and Planetology are all treated with detail and provide the student with a tremendous introduction to geophysics. I recommend it to all geologists and geophysicists!

A wealth of information and tools. It was an excellent companion to what I learned in class and still helps with many geodynamic problems.

This is famous textbook for anyone wants to work on geodynamics

This book has the secrets of harnessing, and taming the powers of the earth. Strongly recommended for those seeking wisdom.

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