

from olivine to spinel, and adiabatic shear instability and the resulting strain softening – are discussed. All of these ideas are reviewed, with the author's views on how and why each of the models fails to explain all the characteristics of deep earthquakes. Touching upon the limitations of each of these models, the author chooses the thermal runaway instability (adiabatic shear) model, which he believes, has a clear physical basis and also satisfies other conditions of slab rheology and physical conditions of mantle materials.

While the studies of the earth's mantle made substantial progress, especially during the last two decades, the study of the earth's core has been rather limited and somewhat isolated from other areas of earth sciences. Recent developments in seismology, high-pressure studies on

core material, progress in dynamo theory and improved understanding of the cores and magnetic fields of other planets have added to our understanding of the earth's core. In the sixth chapter of this book, the author reviews the recent developments in the study of the earth's core – its evolution, composition and structure, and the dynamo theory. Although there have been breakthroughs, many fundamental questions remain, most of all, the validity of geodynamo calculations. This chapter summarizes the difficulties and challenges in modelling the enigmatic central portion of the earth. Progress may be slow, but the vision is clearly getting refined, as elucidated by this book.

The contents of this book truly justify its title. Through an interdisciplinary approach using classical theories, experimental results from mineral physics

and seismological observations, the author provides an updated overview of the theoretical aspects of solid earth sciences. As stated in the preface, graduate students in earth sciences, physics and material sciences may be the targetted audience of this book, but I think it is a useful general reading for all earth scientists. To a practising seismologist, it gives tremendous insights into the micro-level processes that eventually lead to what may be observed using advanced, high-resolution tools. This book is a welcome addition to our libraries.

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Requires

Middle level scientist having at least 10 years postdoctoral research experience with good publication record in modern biology (preferably in molecular genetics, immunofluorescence, protein isolation and characterization) to work on lens tissues. Terms and conditions are negotiable. Apply within a month with full details to Dr P. D. Gupta, Director (Research).