# Index

# Deformation Mechanisms, Rheology and Tectonics

***Geological Society Special Publication No. 54***

*Edited by R.J. Knipe (Leeds University, UK) and E.H. Rutter (Manchester University, UK)*

The papers in this book are gathered into groups that aim to reflect current research themes ranging from geologically-orientated rock mechanics, through structural and microstructural studies of naturally-deformed rock masses to large-scale tectonics. Some of the thematic groups contain a paper with a substantial review component to provide an introductory framework for those new to the subject, however, the book is dominated by original research papers.

- International field of contributors
- Published December 1990
- 528 pages
- 46 papers
- 326 illustrations
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### *Outline of Contents*



* FGS price available on request provided that the correct member number is quoted.

# The Geometry of Normal Faults

***Geological Society Special Publication No. 56***

*Edited by A.M. Roberts, G. Yielding and B. Freeman (Badley, Ashton & Associates, UK)*

During the 1980s a resurgent interest in extensional tectonics resulted, to a large extent, from the ever-increasing non-proprietary availability of seismic-reflection data. In the early-to-mid 1980s much work on extensional fault-systems focused on the innovative application of thrust-belt-type models to extensional basins. In particular the concepts of section-balancing were introduced to those investigating normal faults.

By the late 1980s it was becoming apparent that the universal application of such models was fraught with difficulty. In particular the evidence of both earthquake seismology and detailed field studies began to indicate that faults involved in crustal extension may be, on all scales, essentially planar structures, not linked to a 'listric' thrust-type array.

It is now clear from the geological record that both planar and listric normal faults exist. This book aims to discuss the geological setting and interpretation of these structures.


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# Developments in Sedimentary Provenance Studies

***Geological Society Special Publication No. 57***

*Edited by A.C. Morton (British Geological Survey, UK), S.P. Todd (BP, UK) and P.D.W. Haughton (Glasgow University, UK)*

The study of sedimentary provenance interfaces several of the mainstream geological disciplines. Its remit includes the location and nature of sediment source areas, the pathways by which sediment is transferred from source to basin of deposition, and the factors that influence the composition of sedimentary rocks. Materials subject to study are as diverse as recent muds in the Mississippi River basin, Archaean shales, and soils on the Moon.

Provenance data can play a critical role in assessing palaeogeographic reconstructions, in constraining lateral displacements in orogens, in characterising crust which is no longer exposed, in testing tectonic models for uplift of fault block or orogen scale, in mapping depositional systems, in sub-surface correlation and in predicting reservoir quality. On a global scale, the provenance of fine-grained sediments have been used to monitor crustal evolution.

The aim of the book is to achieve a better understanding of how grain components which comprise a sedimentary rock were assembled, to reconstruct source areas with greater confidence, and to use provenance data more effectively to test tectonic models.


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