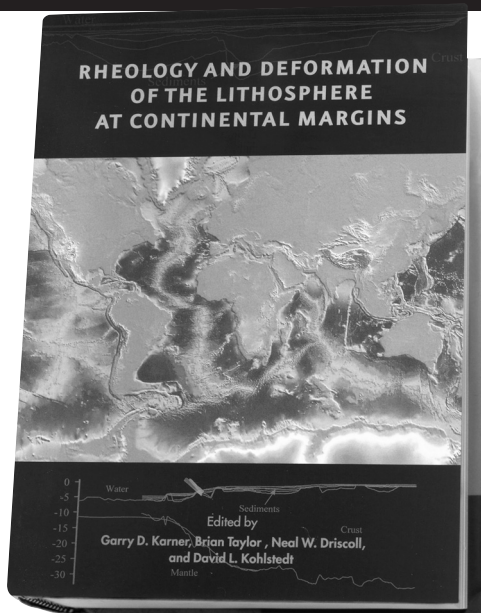


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Rheology and Deformation of the Lithosphere at Continental Margins

Edited by Garry D. Karner, Brian Taylor, Neal W. Driscoll, and David L. Kohlstedt

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Traditionally, investigations of the rheology and deformation of the lithosphere (the rigid or mechanically strong outer layer of the Earth, which contains the crust and the uppermost part of the mantle) have taken place at one scale in the laboratory and at an entirely different scale in the field. Laboratory experiments are generally restricted to centimeter-sized samples and day- or year-length times, while geological processes occur over tens to hundreds of kilometers and millions of years. The application of laboratory results to geological systems necessitates extensive extrapolation in both temporal and spatial scales, as well as a detailed understanding of the dominant physical mechanisms. The development of an understanding of large-scale processes requires an integrated approach.

This book explores the current cutting-edge interdisciplinary research in lithospheric rheology and provides a broad summary of the rheology and deformation of the continental lithosphere in both extensional and compressional settings. Individual chapters explore contemporary research resulting from laboratory, observational, and theoretical experiments.

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