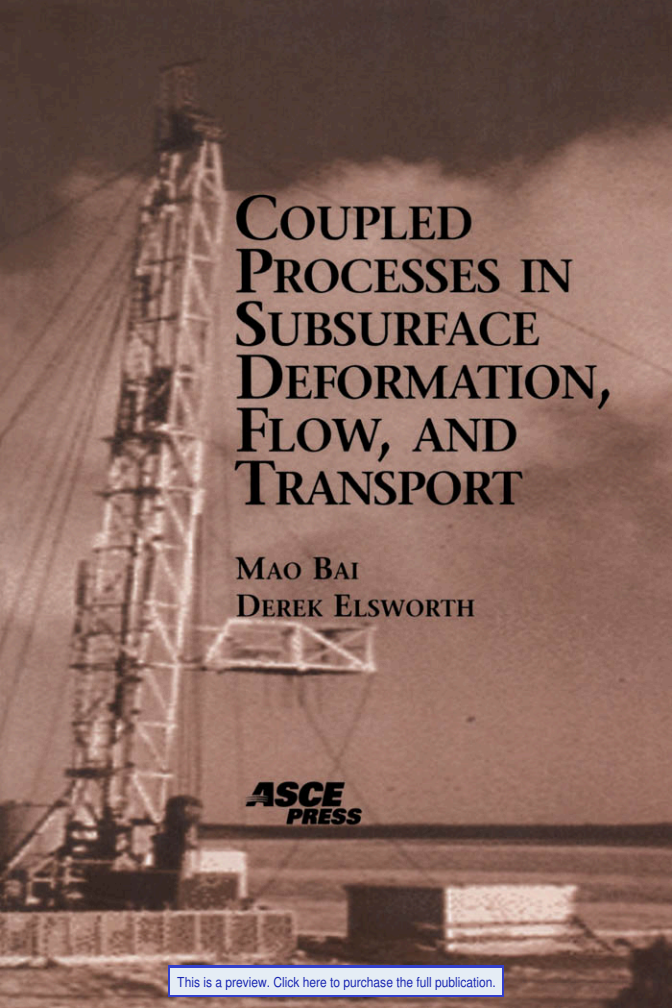

Coupled Processes in Subsurface Deformation, Flow, and Transport

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Abstract: This book presents the fundamental concepts and analytical and numerical approaches available in representing deformation, flow, and transport behavior in geologic media as relevant to many engineering disciplines – civil, mining, petroleum, environmental, chemical, process – and the geological sciences. The individual processes governing deformation, flow, and transport are presented, with emphasis on the coupling and feedbacks present where solid deformation, fluid flow, and solute transport combine, and in the representation of heterogeneous media through multi-porosity approaches. Analytical and numerical solutions for subsurface systems subjected to varying mechanical, thermal, and chemical disturbances are presented. The implications of the theory and solutions presented are reflected in the example applications included throughout the text and in the final chapter.

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Manufactured in the United States of America.

To our parents: Demao and Yongzhi, and Jack and Rosalind.

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