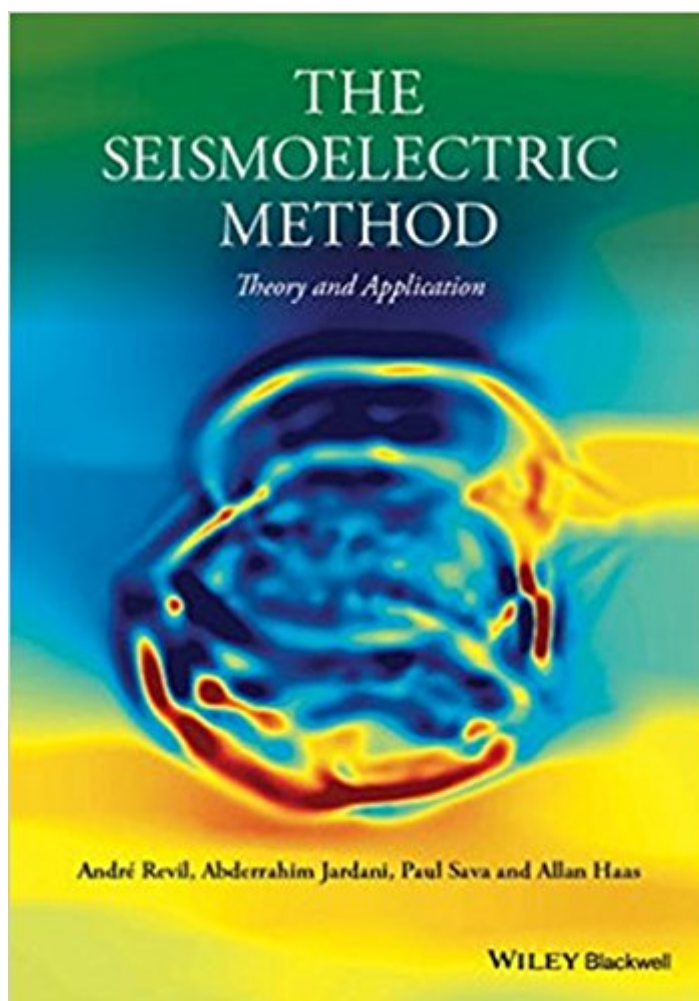


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The Seismoelectric Method: Theory And Application



Synopsis

The seismoelectric method consists of measuring electromagnetic signals associated with the propagation of seismic waves or seismic sources in porous media. This method is useful in an increasing number of applications, for example to characterize aquifers, contaminant plumes or the vadose zone. This book provides the first full overview of the fundamental concepts of this method. It begins with a historical perspective, provides a full explanation of the fundamental mechanisms, laboratory investigations, and the formulation of the forward and inverse problems. It provides a recent extension of the theory to two-phase flow conditions, and a new approach called seismoelectric beamforming. It concludes with a chapter presenting a perspective on the method. This book is a key reference for academic researchers in geophysics, environmental geosciences, geohydrology, environmental engineering and geotechnical engineering. It will also be valuable reading for graduate courses dealing with seismic wave propagation and related electromagnetic effects.

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