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Reches -- Earthquake source properties from instrumented laboratory stick-slip / Brian D. Kilgore, Art McGarr, Nicholas M. Beeler, David A. Lockner -- Dynamic weakening and the depth dependence of earthquake faulting / Nicolas Brantut and John D. Platt -- Part III. Influence of fault properties on coseismic rupture. Scaling of fault roughness and implications for earthquake mechanics / Francois Renard and Thibault Candela -- Fault branching and long-term earthquake rupture scenario for strike-slip earthquakes / Yann Klinger, Jin-Hyuck Choi and Amaury Vallage -- Influence of fault strength on precursory processes during laboratory earthquakes / Francois X. Passelegue, Soumaya Latour, Alexandre Schubnel, Stefan Nielsen, Harsha S. Bhat and Raul Madariaga -- Upper limit on damage zone thickness controlled by seismogenic depth / Jean Paul Ampuero and Xiaolin Mao -- Effect of brittle off-fault damage on earthquake rupture dynamics / Marion Y. Thomas, Harsha S. Bhat and Yann Klinger.

Sommario/riassunto

Why do earthquakes happen? What properties control the dynamic rupture and what are the processes at play? Chapters in the present volume capture the current state of the art by displaying an overview of the existing knowledge on the physics of dynamic faulting and promote multidisciplinary contributions on the observational and experimental fault fabric and mechanics, the evolution of fault zone physical and chemical properties, dynamic rupture processes and physically, and observationally, consistent numerical modeling of fault zone during seismic rupture. This volume examines questions such as: What are the dynamics processes recorded in fault gouge?What can we learn on rupture dynamic from laboratory experiments? How on-fault and off-fault properties affect seismic ruptures? How do they evolve trough time?Insights from physically, and observationally, consistent numerical modeling Fault Zone Dynamic Processes: Evolution of Fault Properties During Seismic Rupture is a valuable contribution for Earth s scientists, researchers and students interested in the earthquakes processes and properties of on-fault and off-fault zones. Its multidisciplinary content is relevant to a broad audience: structural geologist, experimentalists, rocks mechanicians, seismologist, geophysicists and modelers. (source: Nielsen Book Data ; 9781119156888 20170829) --