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Nota di contenuto	Introduction -- Mechanics of Crack Sealing with Fluid Flow in the Plate Boundary -- Large Scale Permeable Convection of the Plate Boundary Zone -- Rapid Process of Massive Extrusion of Plate Boundary Rocks -- Mechanics by Synchronous GRACE Gravity, Earth Rotation, Plate Velocity and Global Correlated Seismicity -- Gaussian Network Model of Global Seismicity -- Prediction Testing of Plate Boundary Earthquake by Global DCNN and VAE-CNN Modeling -- Concluding Remarks.
Sommario/riassunto	The recent understandings about global earth mechanics are widely based on huge amounts of monitoring data accumulated using global networks of precise seismic stations, satellite monitoring of gravity, very large baseline interferometry, and the Global Positioning System. New discoveries in materials sciences of rocks and minerals and of rock deformation with fluid water in the earth also provide essential information. This book presents recent work on natural geometry,

spatial and temporal distribution patterns of various cracks sealed by minerals, and time scales of their crack sealing in the plate boundary. Furthermore, the book includes a challenging investigation of stochastic earthquake prediction testing by means of the updated deep machine learning of a convolutional neural network with multi-labeling of large earthquakes and of the generative autoencoder modeling of global correlated seismicity. Their manifestation in this book contributes to the development of human society resilient from natural hazards. Presented here are (1) mechanics of natural crack sealing and fluid flow in the plate boundary regions, (2) large-scale permeable convection of the plate boundary, (3) the rapid process of massive extrusion of plate boundary rocks, (4) synchronous satellite gravity and global correlated seismicity, (5) Gaussian network dynamics of global correlated seismicity, and (6) prediction testing of plate boundary earthquakes by machine learning and generative autoencoders.