INTRAPLATE EARTHQUAKES

Intraplate earthquakes occur away from the well-known tectonic plate boundaries at locations around the world. These locations are particularly difficult to predict, and they can cause huge damage and loss of life: devastating earthquakes have levelled Bhuj in India (2001), Tangshan in China (1976), Charleston in the USA (1886), and Basel in Switzerland (1356). The Bhuj earthquake (featured in this book) was the largest intraplate earthquake for three decades and the rich dataset collected has provided unique insight into these events.

This cutting-edge book brings together research from international leading experts in the field, compiling multidisciplinary data on intraplate earthquakes. Each chapter provides a comprehensive review of the spatial and temporal patterns of these earthquakes in a different global location, ranging from Australia, China, India and the Sea of Japan, to Western Europe, Brazil, New Madrid in Central USA, and Eastern Canada. The book explores the similarities and differences between regional features, and the mechanical models required to explain them. A broad range of techniques are discussed, including geological investigations of neotectonic features; combined analyses of seismicity, geological, GPS, and geophysical data; seismic reflection tomography, and more. Case studies in the book demonstrate that techniques and strategies used for seismic hazard assessment of plate boundary earthquakes are not valid for intraplate settings, and that new approaches are required for these regions.

Providing the first global overview of intraplate earthquakes, this is an essential book for academic researchers and professionals in seismology, tectonics, tectonophysics, geodesy, structural geology, earthquake dynamics, and geophysics, as well as structural engineers working in earthquake-prone areas.

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