

Intraplate Tectonics: Earthquakes, active tectonics, and seismic hazard in Low-Strain Regions

Dear Colleagues,

We are aiming to organize a special issue titled: Intraplate Tectonics: Earthquakes, active tectonics, and seismic hazard in regions of slow lithospheric deformation. This special issue will complement a number of recent conference sessions on Intraplate Tectonics and Seismicity that have been held at EGU, IGC, INQUA and other societies over the past number of years. The solicitation for contributions to the special issue is below. If you or your colleagues are interested in submitting an article to the special issue, please let us know a tentative title and your list of authors with affiliations by the end of April. Anticipated deadline for submission of manuscripts 31.12.2025.

Sincerely,

The special issue guest editors:

Klaus Reicherter, Beau Whitney, Tamarah King, Sambit Naik

Call for Contributions to the Special Issue

Our proposed special issue will provide a forum that highlights the drivers and variability in earthquake behavior within LSRs (low-strain regions) based on paleoseismological, geological, and seismological data and how this variability can be appreciated in seismic hazard analyses in LSRs. We welcome contributions that (1) present new observations that place constraints on earthquake occurrence and maximum earthquake magnitudes in low-strain regions, (2) explore patterns of stable or temporally varying earthquake occurrence, and (3) provide insight into the mechanisms that control earthquakes in regions of slow deformation via observation and/or modeling.

These contributions cover three different research components. The first component calls upon researchers with recently developed paleoseismological, geomorphological, geodetic, geophysical, and seismological datasets that provide insight into the earthquake cycle in low-strain settings. The second component includes contributions that more broadly synthesize recent insights into the seismotectonics of LSRs and/or explore the driving mechanisms for earthquakes in these regions such as, the comparison of the range of seismic behavior as a function of the different geodynamic attributes of these settings (e.g., crustal age, structure, stress, geology, antecedent tectonics (inheritance); evolving boundary conditions; Quaternary processes (glaciation), etc.). Finally, the third component is seismic hazard assessment in these regions and requests contributions that present the current state of practice, ongoing challenges, and opportunities. Collectively, these contributions may provide a means to better refine and

constrain the types of features or active processes that warrant treatment and attention to advance seismic hazard assessment.

The target audience for the special issue includes topical experts interested in specific case-studies datasets, and models, as well as hazard analysts interested more broadly on the implications of the studies' results for refining the inputs and approaches to seismic hazard analysis in these challenging settings.

We intend to organize these contributions into three special issue chapters, as follows:

- Chapter 1: Paleoseismological studies in regions currently considered Low-Strain-Regions (LSR)
- Chapter 2: Seismicity and seismic hazard in intraplate regions
- Chapter 3: Intraplate deformation and tectonics

Important dates:

End April – titles and coauthors of contributions (04/30/2025)

End December – submission of contributions (12/31/2025)