The trans-disciplinary and community-driven subduction zone initiation (SZI) database

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Numerous studies have provided insights into one of the key problems of the Earth Sciences: subduction zone initiation (SZI). The insights into SZI are both numerous and diverse with evidence from multiple disciplines in Earth Sciences. SZI studies exploit the geological record, reconstruct regional or global plate motion back in time, interpret seismic tomography to identify the tip depth of sunken plate portions, and diagnose theoretical and numerical models of rock and plate deformation based on known physics.

Getting and keeping an overview over the many discipline-specific advances is challenging for many reasons: one being the dispersed sources of information, another being the missing communication across the individual disciplines. The latter shortcoming also arises from the multiple incompatible scientific jargons currently in use.

The SZI database now unifies the scientific jargon, and brings together old and new insights relating to SZI into a common, community-wide platform online (www.SZIdatabase.org). The SZI database builds bridges between individual communities, opening a community-wide discussion by making SZI data readily available and understandable. This keeps data and knowledge up-to-date, and can therefore provide the most complete picture of our current understanding of SZI.

In this presentation, we outline where to find, how to use, and why to contribute to the SZI database. This community-wide project has already yielded interesting results regarding the fascinating question about how and where SZI occurs on present-day Earth and back to around 100 Ma. Work thus far suggests ‘subduction breeds subduction’, highlighting the beginning of crucial insights from these ongoing cross-disciplinary efforts.