

[EE] Evening Poster | S (Solid Earth Sciences) | S-CG Complex & General

[S-CG53]Science of slow earthquakes: Toward unified understandings of whole earthquake process

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Accumulating observational studies on various types of slow deformation events, such as tectonic tremors, very low frequency events, and slow slip events, portrays some universal characteristics in generally complex behavior, including interaction among events and influence by various outer loadings. Some of these phenomena seem to have causal relation with the occurrence of very large earthquakes. A unified understanding of these slow and fast earthquake processes requires an approach integrating geophysics, seismology, geodesy, geology, and non-equilibrium statistical physics. We welcome presentations based on, but not limited to, geophysical observation, data analysis, analytical theory, numerical simulation, field study, and laboratory experiments.

[SCG53-P01]Development of Slow Earthquake Database

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Slow earthquakes have now been widely discovered in the world based on the recent development of geodetic and seismic observations. Many researchers detect a wide frequency range of slow earthquakes including low frequency tremors, low frequency earthquakes, very low frequency earthquakes and slow slip events by using various methods. Since these catalogs are provided by a variety of documents in different formats, previous studies utilizing various catalogs repeated complex procedures for preparing data. To make it more convenient to use such multiple catalogs and to promote researches on slow earthquakes, Scientific Research on Innovative Areas “Science of Slow Earthquakes” has released “Slow Earthquake Database” in December 2017, which compiles and provides a number of catalogs in a unified format in a single repository at the University of Tokyo (<http://www-solid.eps.s.u-tokyo.ac.jp/~sloweq/>). Users can also visualize the source locations of multiple slow earthquakes in the database in the map view on the website. The convenient access to the database encourages researchers to work on slow earthquakes, regardless of their backgrounds. This will eventually lead to collaborations with researchers in various fields and further understanding of the mechanisms, environmental conditions, and underlying physics of slow earthquakes. The database has a leading role in coordinating global standard of slow earthquake catalogs. We report the overview and update of the database.

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