Session 01

Seismic anisotropy and shear-wave splitting: Achievements and perspectives

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Seismic anisotropy has played a crucial role in investigating the Earth's interior from the upper crust to the inner core and is a useful tool to study dynamic processes in the Earth's interior. Shear-wave splitting, being one of the most effective ways to study seismic anisotropy, can study the properties and the geodynamics of the upper mantle by analysing core phases, including sometimes the crust, such as SKS, SKKS and PKS. Shear-wave splitting in the upper crust can be intrinsic or due to the presence of fluid-saturated microcracks, oriented according to the stress regime, as observed in tectonic, seismic or volcanic environments worldwide, as well as in exploration seismology. Temporal variation of shear-wave splitting is a challenging topic, associated with changes of the stress regime and possibly with earthquake occurrence and the gradual inflation and deflation of magma chambers. Azimuthal anisotropy and radial anisotropy can be extracted from earthquake or ambient noise records to detect the seismic layered features and to rebuild the 3D seismic structure. This session aims to present modern research on topics related to seismic anisotropy and shear-wave splitting, including new methods for analysing anisotropic parameters, tectonic implications, geodynamic modeling, laboratory experiments, relations with seismic and volcanic phenomena and novel approaches on the subject. Submissions concerning the different facets of this topic are welcome.