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

[S-CG59]Structure and evolution of Japanese islands - Formation of island arc systems and earthquake cycles

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Subduction processes such as accretion, back-arc-spreading, and arc-arc collisions have shaped the Japanese island arc. Recent advances in seismic imaging, both passive and controlled source, have produced new images of the crust-mantle structure under Japan and surrounding regions. Through the influence of pre-existing faults and rheological structures, these crust and mantle structures are exerting strong control on active tectonic processes like seismic activity and crustal deformation in the overriding plate. We seek contributions that document and/or model the deformation of the Japanese islands over a variety of time scales from the earthquake cycle to the tectonic evolution of the Japanese island arc, and from a range of research fields including seismology, geology, geochemistry, tectonic geomorphology, and geodynamics. Multidisciplinary studies are encouraged. We also welcome contributions in numerical or analogue geodynamical modeling that explore deformation processes.

[SCG59-P05]High-resolution seismic reflection profiles in the Ishikari low land, Hokkaido, Northern Japan

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To estimate seismic hazards, understanding the relationship between active fault and seismic source fault is crucial. To estimates seismic hazards, more detailed survey to identify source faults is needed. A research project funded by MEXT named "the integrated research project on seismic and tsunami hazards around the Sea of Japan" began in FY 2013. To obtain the information of a seismogenic source fault, we performed seismic reflection profiling to illuminate geometry of blind thrusts in the Ishikari lowland . Two seismic reflection profiling was undertaken. LineA is located at the north of 17km of Sapporo. LineB is located northeast of to the Nopporo fault zone. The length of seismic line is 5.5 km and 6.5 km. We used a vibrator truck. We deployed 10 Hz geophones at 10 m interval covering whole seismic line. The sweep signals (8-100Hz for high resolution reflection profiling, 8-40Hz for refraction profiling) were recorded by fixed 552 channels (LineA) and 652 channels (LineB). The seismic data were processed using conventional CMP-reflection methods. Seismic section portrays the image down to 1.8 seconds (TWT). The resultant depth converted seismic section show an anticlinorium (Line A) and anticline produced by an east-dipping reverse fault.