

Report on the Southern and the Central Japan Alps Transect (SCAT)

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The Southern and the Central Japan Alps Transect (SCAT) was made in October in 2008 as the first phase of the deep crustal profiling of Chubu where active faults are densely developed. The main purpose of the SCAT is to reveal the whole crustal structures from the northwestern border of the Izu collision zone to the main part of the Inner zone (Mino belt) crossing the major faults, the Itoigawa-Shizuoka Tectonic Line, the Median Tectonic Line and the Ina Valley Fault Zone. The seismic line ran 70 km in length from the western margin of the Kofu basin to the Kiso village. Receivers were set up at intervals of 50 m in mountainous areas and 25 m in the Ina basin. Their numbers reached over 700. 4-Vibroseis shots were done at intervals of about 1 km in mountainous areas and of 50m 100 m in the Ina basin. 4 dynamite shots were operated in mountainous areas where Vibroseises did not work.

The seismic records gained by the SCAT are extremely excellent in quality, because cultural and artificial noises were very low in level. Although processing works are now still in progress, some significant results have been already obtained

(1) The strata of the Outer zone are W-dipping, that is, toward the Inner zone in the same manner as those in Southwest Japan, although they are dipping E-dipping with reverse facing at surface in the Southern Alps.

(2) Horizontal / subhorizontal reflections are dominant in the Inner zone in the same manner as in Southwest Japan. Remarkably enough, strong reflections occur at TWT 6.0 and 8.0 sec. They might be promising candidates of the detachment as the base of folds / megakinks with vertical axes in the Mino belt.

(3) Surface faults of the Ina Valley fault zone are clearly recognized in the shallow high-resolution profile. Further processing will make them possible to extend toward the deeper horizon.