

## Imaging of seismic scatterers near the western marginal faults of Shizukuishi basin, northeast Japan

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On September 3, 1998, a Mj-6.1 earthquake occurred in northern Iwate Prefecture, Japan. This earthquake caused surface ruptures on the Shinozaki fault of the Nishine fault system. The Nishine fault system is a NS trending, west-dipping reverse fault and bounds the eastern end of the Ou backbone range by the Pliocene to Quaternary Shizukuishi sedimentary basin.

On October, 2001, we carried out a seismic CMP reflection survey to reveal subsurface structure across the Nishine fault system (Koshiya et al. this meeting). Using the same data set, scattering wave analysis was carried out by Kurashimo (1998)'s method which is based on isotropic scattering model. we assumed an isotropic scattering model, and followed Kurashimo(1998)'s method. We applied a semblance analysis to estimate the distribution of seismic scatterers. The semblance coefficient at a particular point in the profile is related to the magnitude of scattering at that point. A high semblance coefficient implies effective excitation of scattered waves.

Along the fault which forms a western segment of the Nishine fault system, a scattering wave analysis clearly demonstrates west-dipping (30 degree) low semblance zone. This fault is an active fault and shows a maximum displacement in the Nishine fault system. The geometry of the low semblance zone accords well to one estimated by seismic reflection profiling and geologic data.