Temporal variation of anisotropy associated with the Western Tottori Earthquake detected using ACROSS

ryoya ikuta[1], Koshun Yamaoka[2]

[1] Earth and Planetary Sci. Nagoya Univ., [2] RC. Seis. & Volc., Nagoya University

S wave travel time showed anisotropic delay associated with the 2000 Western Tottori earthquake.

We are making continuous measurement of P and S waves travel time with a newly developed vibration sources (ACROSS) in Awaji Island 180 km away from the epicenter of the earthquake. The S-wave delay and smaller delay of P-wave suggest that they were caused by increase of fluid saturated cracks. The delay of the S wave shows anisotropy with maximum direction oriented ENE-SWS, which coincides with the maximum compressive stress in this region. This suggests preferred orientation of cracks induced by sudden increase of water pressure associated with quake. Strain and water pressure which were measuered in deep boreholes supported the model.