

Thermal history investigation on the Nojima fault borehole sample by electron spin resonance (ESR)

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Quartz grains extracted from the Nojima fault borehole sample were measured by electron spin resonance to investigate the thermal history in the host rock, Nojima granodiorite, especially around the fault surface. Signal intensity of the Ti center decreased in the region of the fault zone around 625 m while the E' and the Al centers increased. This is consistent with the result that the Ti center is less stable than the Al and the E' centers in Mannari granite, Japan. The intensity of the E' center increased after heating samples at 250 oC for 30 minutes, which implies that the samples may not be affected recently by heating more than 200 oC. The Ti and the Al centers show thermal disturbance around 250 m, which is concordant with the results of fission-track (FT) analysis.

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