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Zircon fission track thermochronology of an ancient seismogenic zone in Shimanto accretionary complex Southwest Japan

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To better understand heat generation and transfer along faults in the subduction zone, we measured 7 length distributions of fission tracks in zircons separated from sandstones in and around ancient seismogenic zone found in the Shimanto accretionary complex, southwest Japan. Samples were collected along a traverse approximately orthogonal to the tectonic boundary fault between the Nonokawa Formation and Okitsu Melange of the complex, which was once located in the seismogenic zone judged from the occurrence of pseudotachylyte therin. The observed FTs showed significantly reduced mean length for samples from 10 to 20 meters away orthogonal to the fault on the hanging-wall side. This suggests that the heating up to the zircon partial annealing zone occurred by a thermal event along the deposition that locally perturbed the geothermal structure.

Keywords: Fault, Acrretionary Complex, Fission Track