

Relations between background seismicities, asperities and aftershock activities in southwestern Kuril Trench

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We investigated background seismic activity off Tokachi and off Nemuro regions and compared it with asperities estimated by Yamanaka and Kikuchi(2001) and Yamanaka and Kikuchi(2003). An asperity of the 2003 Tokachi-Oki earthquake(M8.0) corresponded to the low seismicity patch surrounding high seismicity area. This property only revealed by Hokkaido University's microseismic catalogue because of high ability of hypocenter determination. Spatiotemporal mapping of seismicity inner low activity patch did not indicate any fluctuation like as seismic quiescence. Same relation between asperity and background seismicity recognized off Nemuro, in where M7.3 earthquake occurred in 1973, and focal region of the 2004 Kushiro-oki (Hamanaka-oki) earthquakes (maximum M7.1). These facts indicated possible extraction of unknown asperities from earthquake catalogue.