

Spatial distributions of b-value in and around Japan

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We estimated spatial distributions of b-value in and around Japan. We divided the seismically active region into four regions considering the tectonic conditions: the shallow land area, the Pacific interplate region and the lower part of double-planed deep seismic zone in the Pacific plate, and the slab region of the Philippine Sea plate. We used the JMA catalogue in the period from January 1, 1990 to December 31, 2005 and estimated the b-value by using the computer program ZMAP (Wiemer, 1996).

As for the Pacific interplate region, anomalously high b-values are observed in four areas: off-Urakawa, off-Iwate, off-Fukushima and off-Ibaraki regions, and it is found that asperities estimated by analyzing the wave forms (Yamanaka, 2003) do not intrude into them. This result is similar to that obtained by Hirose et al. (2002).

In the shallow land area, low b-value regions distribute near epicenters of earthquakes with M6.0 or larger which have occurred after 1990, except the regions of southern Hokkaido, Mt. Fuji, Toyama pref., and Kumamoto pref.