

Temporal and spatial changes in b-value for the 2016 Kumamoto Earthquakes

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At 09:26, on April 14, 2016(LT), the first Kumamoto EQ (Mj6.5) occurred at depth of 11 km in Kumamoto Prefecture. This EQ is thought the foreshock of the main shock (Mj7.3) at 01:25 on April 16 (LT). In this paper, we will show the results of b-value changes in time and space for the 2016/04/16 Kumamoto Earthquakes base on Gutenberg–Richter law. We used the JMA earthquake catalog (2010/01/01-2016/04/16) and earthquakes shallower than 20 km depth. For the investigation of spatial changes, we analyzed the region of E129-133 (deg.) and N31.0-34.5 (deg) with interval of $G=0.05$ (deg). We take the circle with radius $R = 60$ (km) and the number of earthquake N in the circle for computation. We set $N=80,100$ as a threshold and if $N<80$ or 100 , we do not compute b-values. For the investigation on temporal changes, we used the moving window method of a certain number of earthquakes. We take the number of earthquake of the windows 200 and 100 with shift of 100 and 50, respectively. The details will be shown in the presentation.

Keywords: Earthquake, b-value