

# **SPATIAL AND TEMPORAL VARIATIONS OF THE SEISMICITY ACROSS AUSTRALIA**

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A first attempt to quantify seismic activity rate across the whole of Australia has been made in present study. Using the most complete catalogue of Australian earthquakes to date and the software tool ZMAP, spatial and temporal variations of the seismicity in the continent have been studied. A pseudo periodicity in an increased seismic moment release with a period of 20-25 years is observed. The 'b' value over the whole area is estimated to be 0.97 for the events with  $M_L \geq 3.99$  since the introduction of instrumental recording at the beginning of the century. The 'b' value map with the above parameters reveals an area with anomalously low 'b' in the centre of the continent, surrounded by a belt of low than average 'b'. It could be assumed that a concentration of stress is taking part in the centre of the country, but the detectability of the weak events is also lower than average in this area. A time slices of the seismicity have been carried out every 10 years since the deployment of the first seismic networks in early 1960s. The 'b' value stays similar with occasional decrease, most significant in the 1970s, when a large number of strong events have occurred. An Alarm Cube of significant drop in the seismic rate since approximately 1985 has been drawn out. It reveals two zones in the SE part of the country, which the most densely populated region, as anomalous