

Crustal deformation of the 1923 Kanto earthquake appeared in atmospheric pressure

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Atmospheric pressure is caused by the load of atmosphere above the observation site. Consequently, for example, when the barometer is moved down by 1m, the pressure is raised by about 0.12hPa which corresponds to the load of atmospheric layer of 1m in thickness. Based on this fact, the author discussed before about the remarkable uplift associated with the 1923 kanto and 1946 Nankai earthquakes.

Although the detectability is poor and estimation errors are not so small, the observation points of barometer are sometimes located just at the cape which makes out to the hypocentral region of a subducting large earthquake. In order to evaluate the utility of the barometric data, the crustal deformation of Mera (located at southern tip of Boso Peninsula) was tried to analyze in the present work.

Using the data of adjacent barometric stations, meteorological change in atmospheric pressure is able to be corrected at least to some extent. As a result, Mera station was considered to uplift probably more than 3m at the 1923 Kanto earthquake. After then, 30% of the uplift might have been cancelled gradually within 1-2 years. Incidentally, at this moment of time, precursory change to the earthquake was not clear.