

A rainfall correction of the strainmeter for detecting a small short-term change (2)

KIMURA, Kazuhiro^{1*}, TSUYUKI, Takahiro², SUGANUMA, Issei², FUJITA, Kenichi²

¹Meteorological Research Institute, ²Japan Meteorological Agency

A present rainfall correction of the strainmeter for forecasting of the Tokai earthquake has a problem. The present rainfall correction has a effect that smoothes off a sharp change by the rainfall and holds down the peak of the rainfall noise, but it has a rainfall effect for a long time slowly. It is difficult to detect a small short-term change while such as the rainfall effect. It is desirable for a trend to be constant to detect the small short-term change.

We considered that the reply of the strainmeter by the rainfall is effect of the load by the rainfall. We tried to a rain fall correction of the volume strainmeter, a simple tank model of one level or two levels got a good result than the AR-method. (Kimura et al., 2011) This is because a tank model can express the increase of the outflow coefficient with the increase of the rainfall accumulation.

We retried to a rain fall correction of the strainmeter by the tank model of three levels which is used as Soil Water Index of JMA. We estimated many parameters of the tank model of three levels by the SCE-UA method. We could obtain a better result by using a complicated tank model about some observation station. We explain these results.

Keywords: Strainmeter, Rainfall correction, Tank model, SCE-UA method