Observation of Atmospheric Parameters for Short-term Earthquake Forecast at Kanto, Japan: Characteristics of Rn Variation and Signal Separation

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Anomolous changes in the Ionospheric electron density is one of the most promising precursory phenomena for large earthquakes. Lithosphere-Atmosphere-Ionosphere Coupling (LAIC) model has been proposed to explain these phenomena. To examine the possibility of the chemical channel of LAIC model through the monitoring of atmospheric electricity parameters, we have installed sensors for the atmospheric electric field (AEF), atmospheric ion concentration (AIC), radon concentration, radon exhalation quantity (REQ), and weather elements at Asahi station, Boso Peninsula, Japan. To detect signals related to earthquakes, variations caused by non-tectonic activities should be removed. In this aim, we performed singular spectrum analysis (SSA) for observed time series of radon and climatic parameters and investigated correlation among them. Then we tried to extract radon variation influenced by climatic effects to remove such variations from original time series. The details will be shown in our presentation.