

## Rn flux anomaly and local seismicity around Asahi station, Boso, Japan

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In recent years, there are many studies reported electromagnetic phenomena preceding earthquakes such as ionospheric anomalies. Lithosphere-Atmosphere-Ionosphere Coupling (LAIC) model has been proposed to explain these phenomena. In this study, to explain the possibility of the chemical channel of LAIC, we have installed sensors for atmospheric electric field (AEF), atmospheric ion concentration (AIC), atmospheric Rn concentration (ARC), ground Rn concentration (GRC), and weather elements at Asahi station, Boso Peninsula, Japan. Because the atmospheric electricity parameters could be mainly influenced by weather factors, it is necessary to remove these influences as much as possible. In this sense, we apply the MSSA (Multi-channel Singular Spectral Analysis) to remove these influences from the GRC variation and estimate the Rn flux from the ground. Then, we investigate the correlation between the changes in the Rn flux and seismicity around the station. As a result, we found the correlation between Rn flux and regional cumulative seismic moment and/or Es index, which indicates the daily seismic energy near the station received at the station. It is highly suggestive of the effectiveness of GRC monitoring in regional seismicity around the station. Further researches such as network observations will be required for the detailed consideration on the correlation between Rn flux and seismicity such as magnitude and distance dependences.

Keywords: Lithosphere-Atmosphere-Ionosphere Coupling, atmospheric electric field, atmospheric ion concentration, ground Rn concentration