

An analysis between the environmental electromagnetic field and estimated E-field from the magnitude of earthquakes

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We have constructed a network system for environmental electromagnetic field measurement in order to observe unusual electromagnetic signals before earthquakes. Environmental electromagnetic field measurement network using this technology was started as EEON in April, 2003.

The mechanism of seismo-electromagnetic signals (SEMS) generation has not solved completely and various hypotheses were suggested. According to the electromagnetic model of a geological faults, SEMS were caused by release of piezo-compensating charges. The released charges must produce EM field with pulse-like behavior. This theory explains the characteristic of wide frequency appearing in SEMS at various bands.

Considering this model, we estimated each e-field for earthquake occurred in Japan in all observation period. We examined whether environmental electromagnetic field had changed before particular earthquakes through the period.