

## Accurate pointing of source locations of earth-origin EM pulses derived from arrival directions measured at two observation sites

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In order to point source locations of earth-origin EM pulses on real-time basis, we have set the second observation site in an earthquake observatory of Nagoya University at Misugi-cho, Tsu-city, Mie-prefecture, where is about 82 km from the first observation site in Kyoto Sangyo University. During test measurements at the second site for more than one year, we have been improving the sensor system for measuring arrival directions of earth-origin EM pulses. We have confirmed the basic specification of electric circuits of pre-amplifiers with each sensor and their configurations, and then we have accomplished making the final sensor system. The refined sensors were installed into each borehole at both the two observation sites at the end of 2007.

From the beginning of 2008, we started observations for pointing source locations of earth-origin EM pulses by the network consisting of two sites. During the first month, the system has pointed less source locations of the EM pulse, because the seismic activity was also weak in the Kinki-district during this period. From January 12 to 27, we obtained some source locations which are forming a linear distribution on a map, from the Shima-peninsula to the Tokai offshore. About seven and a half hours after the last pointing of the source locations from 01:37:04 to 02:57:08 of January 27, an earthquake of M3.8 occurred at 10:33 at a point of 34.9 N and 138.0 E where is the west part of Shizuoka prefecture. Although we do not know whether their source locations have a direct relation to the earthquake or not, the quantitative data of spatial and temporal change of source locations of earth-origin EM pulses would provide us important information as a precursor of earthquakes.