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ULF geomagnetic anomaly possibly associated with earthquake

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The southern part of Kanto District, Central Japan is one of the seismically active regions in Japan because of three plates (Pacific, Philippine Sea, and Eurasia). In order to investigate the electromagnetic phenomena associated crustal activity, the precise ULF electromagnetic measurement network has been established for these 10 years. At each station, three magnetic components and two horizontal electric components are observed in general. There are two arrays with interstation distance of 5 km in Izu and Boso Peninsulas and 10 years data have been we accumulated. During this periods, we had the 2000 Izu islands earthquake swarm, the 2002 and 2007 Boso slow slip events and so on. Signal associated with crustal activity are very weak in comparison with other noise such as geomagnetic pulsations and artificial noise, therefore advanced signal processing is required. In my presentation, I would like to show some methodologies and related results. In this paper, some case studies and statistical study on ULF electromagnetic changes possibly associated with crustal activities will be presented.

Keywords: ULF geomagnetic anomaly, earthquake, crustal activity