[EE] Evening Poster | M (Multidisciplinary and Interdisciplinary) | M-IS Intersection

## [M-ISO3]Interdisciplinary studies on pre-earthquake processes

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Thu. May 24, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe) This session expands the interdisciplinary discussions on preparation process of earthquake and earthquake predictability by presenting the latest progress in studying the physically based preearthquake phenomena. New observations from space and ground have provided

evidences, which may enhance better understanding of tectonic activity. The session anticipates talks that include but not limited to observations and analyses of seismic, electrical, electromagnetic, electrochemical and thermodynamic processes related to stress changes in the lithosphere along with their statistical and physical validation. Presentations on the latest observational results associated with major earthquakes obtained by different methodologies are welcomed. The topics of the session are as follows but not limited.

-General discussion on earthquake preparation process and the physics of pre-earthquake signals

- Theory, modeling, laboratory experiments, computational simulation for generation and propagation of pre-earthquake signals and their connection with seismic cycle

- Multi-parameter observations, detection, and validation of pre-earthquake signals

- Cross-disciplinary studies, practical and technical approaches for better understanding of earthquake preparation processes and their connection with seismicity

## [MISO3-PO6]Measurement of the radon density in the atmosphere at Okayama, Kochi, Choshi and Kiyosumi

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Keywords:radon, atmosphere, earthquake prediction

An increase of the radon in underground water at Nishinomiya City<sup>1</sup> and an increase of the radon in atmosphere<sup>2</sup> at the southern part of Hyogo Prefecture earthquake in 1995 were reported. Moreover, in the case of Tohoku Region Pacific Coast Earthquake, the data of the exhaust air monitor in the radiation facility of Fukushima Medical College (Fukushima) has been reported that the peak duration was long, and the peak decreased rapidly before the earthquake<sup>3</sup>.

On the other hand, a PIN photodiode have been developed for high sensitive alpha detector, and used in Super-Kamiokande<sup>4</sup>. Two years ago, we made an instrument to measure atmospheric radon, using PIN photodiode. We used a Si PIN photodiode as detector, S3204-09 (Unsealed), supplied by Hamamatsu

Photonics K.K. We constructed the radon detection instrument, using an aluminum pot as air container, H4083 as charge amplifier, C4900-01 as High voltage power supply module, a pulse shape amplifier with 10 micro-sec time constant, a Multi-Channel Analyzer (MCA-LiteN), and a Personal computer as data analysis. Alpha spectra of atmosphere showed 4 peaks, <sup>218</sup>Po, <sup>214</sup>Po and <sup>210</sup>Po of U series, and <sup>212</sup>Po of Th series.

Last year we newly set up these instruments at Kochi, Choshi, and Kiyosumi. This time we will report results of Kochi, Choshi, and Kiyosumi for about one year. We will also report result of Okayama for two years.

## References

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