Measurement of radon density in the atmosphere at Okayama, Kochi, Choshi and Kiyosumi, II

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We report continuous measurement of radon density in atmosphere at Okayama for three years, Kochi, Choshi and Kiyosumi for two years. An increase of radon density in groundwater at Nishinomiya city [1] and in atmosphere [2] at the southern part of Hyogo Prefecture Earthquake in 1995 were reported, respectively. In the case of Tohoku Region Pacific Coast Earthquake, the data obtained the exhaust air monitor that peak duration was long and the peak decreased rapidly before earthquake has been reported at the radiation facility of Fukushima Medical College in Fukushima [3]. On the other hand, a PIN photodiode have been developed and used as a high sensitive alpha ray detector in Super Kamiokande [4]. Since 2016, we also made an experimental setup using PIN photodiode, and measured the radon density in atmosphere. Using a Si PIN photodiode (S3204-09, unsealed, Hamamatsu Photodiode K.K.) as an alpha ray detector, we constructed radon detection setup combined with aluminum pot as an air accumulator, H4083 (Hamamatsu) as a charge amplifier, C4900-01 (Hamamatsu) as a high voltage power supply module, a pulse shaped amplifier with time constant of 10 msec, a multi channel analyzer (MCA-LiteN), and a PC as a data analysis. Obtained alpha spectra of atmosphere showed 4 peaks originated from ^{218}Po, ^{214}Po and ^{210}Po of U series, and ^{212}Po of Th series. Since 2017, we newly started to measure at Kochi, Choshi and Kiyosumi using our apparatus. Details of observed data are discussed in addition the data at Okayama since 2016.

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Keywords: radon, atmosphere, earthquake prediction

