

§2. Environmental Radiation Monitoring at Toki Area

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Environmental radiation monitoring activity has been continued to define radiological distribution and behavior with time elapse under natural conditions. To clarify the regional radiological characteristics means to studies environmental dynamics at the view points of geological effects to the local area according to operation of LHD and another radiation generation devices. This study started as collaboration with Plasma Research Committee of Toki-city. It is significant to collaborate with teachers of public schools around Toki area and NIFS. Radiation monitoring methods and results are as follows.

Thermo luminescence dosimeter (TLD) pellets ($\text{CaSO}_4 \cdot \text{Tm}$, UD-200S made by Matsushita Elec. Co.) were set at 16 points in Toki and Tajimi area for 3 months (exchanged in June, September, December and March). The environmental radiation exposure rates are distributing in 0.5-1.5 mGy/y, almost equal to 0.5-1.5 mSv/y. Noticeable fluctuation is not observed at the same point.

Since last years, radon and its daughters in the environmental atmosphere has been measured.

Radon and its daughter nuclides are considered as representative radiation source for public exposure by natural radiation especially in-door residents. The radon concentration was measured with a nuclear track detector of CR-39 plastic plates which was set in a hemispherical aluminum cup. Its concentrations are around 4-67 Bq/m^3 . The maximum point is Kawai, and average was around 10-20 Bq/m^3 . Relation of radon concentration and radiation level measured with TLD shows linear tendency. Some points show that the radon concentration tends to high in autumn and winter, and it tends to low in spring and summer. This tendency may be related to atmospheric stability and seasonal wind. In autumn and winter, seasonal north-west wind brings radon generated at china. On the other hand, in spring and summer, the atmospheric stability is low and seasonal south-wind from pacific ocean is not including radon.

As special activity of the committee on summer, we visited the Super Kamiokande of the University of Tokyo, where neutrino in cosmic rays detection is the major research topics. To understand the cosmic rays as a part of the environmental radiation is useful.

The continuous measurement of environmental radiation will become much more important.

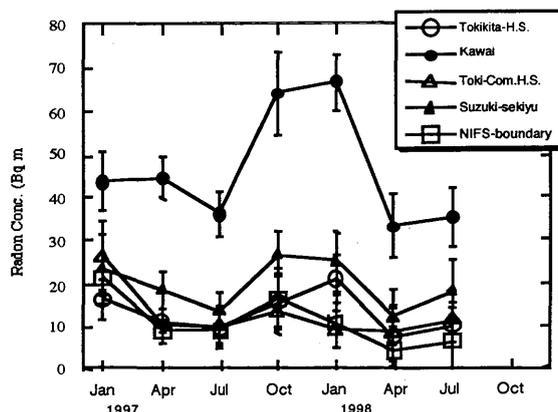


Fig.1 Environmental radon concentration measured in Toki area.