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Radon measurement in caves by a household use radon monitor

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An increase of the radon in underground water at Nishinomiya City and an increase of the radon in atmosphere at the southern part of Hyogo Prefecture earthquake in 1995 were reported. We started to measure the radon in air by a low cost radon monitor for predicting the possibility of the earthquake. We used a Radon Monitor of SUN NUCLEAR Corporation, Model 1028, and 1029 as a radon monitor. This monitor is effective for the radon measurement at several tens Bq/m³ level though it is not so sensitive to be able to measure the daily change of the radon concentration at several Bq/m³ in the atmosphere. This monitor is possible the sequential measurement at every hour for over one month by 9V Li battery. However, it has a fault of weakness for humidity. This time, the calibration experiment was done to examine the precision of this monitor. We will report the results of this calibration experiment. We selected the cave as a place with higher level of radon concentration. However, there is possibility that the monitor will be broken because of humidity in caves. Then, we tried to measure radon in air with dehumidifying by a portable desiccator. This time, we tried to measure time variation in a cave of Okayama for two months, and in a cave of Iwami-Ginzan for one month. We will report the results of observation in these caves.

Keywords: Radon, cave, earthquake, prediction