

# A Pilot Study of an Active Learning Program for the General Public using Radiological Monitors

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Raising children in a safe and healthy manner is the most important task in our daily life. The nuclear accidents in the Fukushima Daiichi Nuclear Power Plant complex, associated with the horrific earthquake, The Tohoku Earthquake, caused radioactive contamination via nuclear fallout in the eastern region of Japan. Some meteorological agencies in other countries soon released their radioactive material diffusion simulations for the region immediately, whereas the general public in Japan could not obtain enough information about the diffusion for a few weeks because of control by their government. Most parents raising children certainly lacked and sought information about the contamination by nuclear radiation in areas relevant to their daily activities. The author, living in Ibaraki Prefecture next to Fukushima Prefecture, met many parents who sought to measure the radiation doses using radiological monitors at parks, gardens, street, drains/trees etc. Through such measurements done together, they seemed to have learned much about the presence of radioactive material and the mechanism of their accumulation by rain fall and where the relatively safe places for their children were. These experiences triggered the launch of this study.

In this study, an active learning program focused on radiation monitoring for the general public is proposed. The program has been adapted for students at university and improved over a period of three years. It is composed of four parts: previous learning, outdoor measurement, indoor analyses by mapping, and discussion. First, short lectures about radioactivity and the mechanisms of radiological monitors are given. After that, the participants are divided into small groups that set the science targets for each group according to their interests. The outdoor radiation monitoring then is performed collaboratively at various places selected for their targets. Accomplishing these measurements by themselves, they progressively acquire the scale of radiation doses. After all measurements are carried out, they undertake to create the radioactive contamination maps from the obtained profiles. The analyses and discussions about the contrast in contamination levels on maps are carried out in each group. These small group discussions likely contribute to a deeper understanding of radioactive material in rainfall, soil, trees, and other phenomena associated with earth science.

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