

The amount of Cs adsorption to the amorphous materials in the Fukushima soil

Masaya Suzuki^{1*}, Katsuhiko Tsukimura¹

¹Geological Survey of Japan, AIST

This study describes the amount of Cs adsorption to the amorphous materials in the soil of Fukushima Prefecture containing radioactive Cs. Although it is supposed that radioactive Cs is strongly adsorbed to clay minerals, such as mica, many amorphous materials of the volcanic-ashes origin exist in the surface of Fukushima soil. So, there is a possibility that not only clay minerals but the amorphous materials are adsorbed in radioactive Cs. In this research, the soil containing radioactive Cs was classified with elutriation, the dissolution experiment was conducted using each classified sample. In each sample, organic matter is dissolved using hydrogen peroxide and amorphous materials are dissolved using oxalic acid. After dissolving test, the mass and a dose of radiation before and after the dissolution were measured. In the sample of 8-16 micrometers, 16-32 micrometers, and 32-64 micrometers, the weight loss were 47wt% and 40wt% and 49wt%, respectively, and the reduction rate of the dose of radiation were 52%, 58%, and 52%, respectively. From this result, it became clear that there is a considerable quantity of radioactive Cs adsorption in amorphous materials and an organic matter in the fine particle of soil.

Keywords: cesium, amorphous, adsorption, soil