

Relationship between radioactive isotopes and stable elements contained in the aerosol

J. Yuan¹, K. Sera² and T. Takatsuji¹

¹Graduate School of Fisheries Science and Environmental Studies, Nagasaki University
1-14 Bunkyo-machi, Nagasaki 852-8521, Japan

²Cyclotron Research Center, Iwate Medical University
348-58 Tomegamori, Takizawa, Iwate 020-0173, Japan

Abstract

We have investigated the relationship between Pb-210, natural radioactive isotope, and the stable elements contained in the aerosol. Another purpose of this study is to elucidate the behavior of aerosol and the origin of the artificial radioactive elements. Cs-137 and Cs-134 were detected in Nagasaki City. The samples were collected in Nagasaki Prefectural Forest Park and the Nagasaki City urban district. The samples were analyzed by PIXE and a Ge semiconductor detector. The amount of many elements would have to change much in Mar and Apr each year in Nagasaki Prefectural Forest Park. But it didn't change much in other time. The change in Nagasaki Prefectural Forest Park was greater than Nagasaki City urban district. Because of the amount of Na was higher in Nagasaki City urban district, it was considered coming from sea water. Concentrations of many elements at the urban district were higher in winter. They are suspected to rise from the nearby district. Elements such as Cs-137 and Cs-134 were found in Nagasaki Prefectural Forest Park and Nagasaki City urban district which were proved from the Fukushima Daiichi nuclear power plant.