# $^{129}I/^{137}Cs$ ratios for atmospheric particular matters collected just after TEPCO FDNPP accident

Y. OURA[1]*, M. EBIHARA[1], N. SHIRAI[1], H. TSURUTA[2], T. NAKAJIMA[3], Y. MORIGUCHI[4], T. OHARA[5], Y. NAGAKAWA[6], N. SAKURAI[6], H. HABA[7] AND H. MATSUZAKI[4]

[1]Tokyo Metropolitan Univ., Hachioji, Tokyo, Japan (*correspondence: oura-yasuji@tmu.ac.jp, ebihara-mitsuru@tmu.ac.jp, shirai-naoki@tmu.ac.jp)
[2]RESTEC, Toranomon, Tokyo, Japan (tsuruta_haruo@restec.or.jp)
[3]JAXA, Tsukuba, Ibaraki, Japan (teruyuki.nakajima@aori.u-tokyo.ac.jp)
[4]Univ. of Tokyo, Tokyo, Japan (yuichi@env.t.u-tokyo.ac.jp, hmatsu@um.u-tokyo.ac.jp)
[5]NIES, Fukushima, Japan (tohara@nies.go.jp)
[6]Tokyo Metropolitan Indust. Tech. Re. Insti., Tokyo, Japan (nagakawa.yoshiyasu@iri-tokyo.jp, sakurai.noboru@iri-tokyo.jp)
[7]RIKEN, Wako, Saitama, Japan (haba@riken.jp)

We have been determining $^{134}Cs$ and $^{137}Cs$ in suspending particulate matters (SPM; aerosols less than 10 μm in diameter) collected hourly from Mar. 12 to 23, 2011 at SPM monitoring stations in eastern Japan to reveal spatio-temporal trajectory of radioactive plums caused by TEPCO FDNPP accident, and the dataset for 99 monitoring stations was reported [1].

Recently, we are trying to estimate atmospheric $^{131}I$ concentration just after the accident by determining $^{129}I$ in those SPM samples. Because the SPM samples are very valuable, a part of sample (generally a part of 1/4) is subjected to $^{129}I$ determination and the remaining part was held for any other purposes. Therefor it is essential that radionuclides are distributed uniformly in a SPM sample. Uniformities of distribution of $^{137}Cs$ and $^{129}I$ in large filter samples on which particulate matters were collected were examined by analysis of several parts of a sample. $^{137}Cs$ was found to be distributed inhomogeneously for some SPM samples in which particulates with stronger activity were observed by autoradiography. On the contrary $^{129}I$ distributions were generally uniform for all samples. Thus, radioactivity ratio of $^{129}I/^{137}Cs$ was not necessarily consistent within a SPM sample. It was maybe suggested that carriers of Cs and I were different.

[1] Oura *et al.*(2015), *J. Nucl. Radiochem. Sci.* **15**, 15-26 (2015)