Biogeosciences Discuss., 10, C13–C15, 2013
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Biogeosciences Discussions

Interactive comment on "Surface pathway of radioactive plume of TEPCO Fukushima NPP1 released ^{134}Cs and ^{137}Cs" *by* M. Aoyama et al.

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Received and published: 17 January 2013

This report documents zonal dispersion velocity of Fukushima nuclear power plant 1 (FNPP1) - derived radionuclides (radiocesium) based on their huge data set coincided well with velocity observed by ARGO float and satellite. The conclusion is very simple and result is no doubtful. Authors have been making big efforts to collect spatially and temporally seawater sample for analysis of FNPP1 - derived radionuclides after FNPP1 accident. It is no doubt that their data set are valuable and should be published or opened. Thus I recommend this article acceptable. However the following minor points (associating legend of Fig. and Table mainly) should be clarified, re-considered and revised before publishing.

1. Result's Section 3.2 In the North Pacific (p. 270) (1) Sentences from line 1 to

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24 are not “results” but “review”. In this section, results should be introduced mainly and sentences of “review” should support or explain results. (2) Figs. S3-S6 are very impressive and “key” figure of this paper. These should be Figures in body text rather than supplement.

2. Satellite based current zonal velocity is smaller than other estimates (P.273 L4 – L17) ?! Although zonal velocity based on dispersion of Cs and Argo float were in good agreement, it is a little hard to say that satellite based current zonal velocity (from Table S3 and Fig. S7) coincided well with Cs-based and Argo-based zonal velocity. Zonal velocity of 6 – 10 cm sec-1 were found only between 160E and 180E based on satellite data and zonal velocity between 140E and 160E were 2 - 6 cm sec-1 (Table S3 and Fig. S7) although average zonal velocity during observation was estimated to be 7 – 8 cm sec-1 by Cs dispersion and Argo float.

Table 1. Please add legend about the followings. (1)What are “BD” and “NA”? (2)Radioactive decay was corrected at a time of collection? (3)What is error (one sigma of counting error)?

Fig.1 Please add legend about the followings. (1)What is meridional zone? 38 – 42°N? (2)What is difference in colors of bars?

Table S3-1, S3-2 (1)Please add description “meridional zone of 38 – 42°N” to legend.

Fig. S1 Sampling in the Atlantic Ocean is special. Please add the description to legend like the following description. “Samples in the Atlantic Ocean were collected in December 2011 (see Table 1).”

Fig. S2 (1)Please clarify respective positions D, T, F and U. (2)“July 2012 of Fukushima” ?? Legend should be reconsidered. (3)Which data is obtained by authors?

Fig. S3-S6 What is black circle (“0” Bq m-3)?

Fig. S7 Which float # is A, B, C, D, E, F and G? Fig. S3-S6 How about using respective float alphabet instead of “A” of Argo float because A in Fig. S7 is different from “A” of

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10, C13–C15, 2013

Interactive Comment

Argo float? A little confusing.

Interactive comment on Biogeosciences Discuss., 10, 265, 2013.