

# ***Interactive comment on “Ocean dynamic processes causing spatially heterogeneous distribution of sedimentary caesium-137 massively released from the Fukushima Dai-ichi Nuclear Power Plant” by H. Higashi et al.***

## **Anonymous Referee #3**

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The authors employed complex model for Cs-137 concentration in seawater and sediment to represent the spatially heterogeneous distribution in sediment. I don't agree with their results of total amount of Cs-137 in sediment which is 10 times larger than previous estimated value based on observation. Main problem is that they only considered sedimentation and resuspension process in a similar manner to Europe. In Fukushima case, very high concentration of Cs-137 passed through on the sediment in the earlier period. Therefore, absorption and desorption process on sediment is dominant (Otosaka and Kobayashi, 2013). Sediment properties is a major factor of

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Cs-137 on absorption and desorption process. They did not considered these dominant process. They simulated the sedimentation rates of Cs-137. The sedimentation rates were observed by sediment trap (Honda et al., Biogeosciences, 2013; Buesseler et al., ES & T, 2015). They should validate the sedimentation rates in comparison with observed data if they believe that sedimentation process is dominant. I think their simulated sedimentation rates are overestimated to observed value. If they simulate more than 2 or 3 years, difference between observation and their simulation is getting larger. Because their model focus on sedimentation process which is not dominant in Fukushima case.

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