

Interactive comment on “Xenon-133 and caesium-137 releases into the atmosphere from the Fukushima Dai-ichi nuclear power plant: determination of the source term, atmospheric dispersion, and deposition” by A. Stohl et al.

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First of all, an important contribution. Compliments. Two particular requests for further clarification:

(1) time of the first release

The conclusion that the release started already before the station blackout requires in my opinion not only an uncertainty analysis of the reconstructed amplitudes of released activities, but also a discussion of the uncertainties of the transit times involved, which

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are defined by the accuracy and density of velocity information and the modeling of the turbulent diffusion. Have you carried out more detailed analyses in this regard? If yes, could you give me an overview of the obtained results?

The conclusion was drawn from the reconstructed Xe-133 release. According to your paper, for the inverse task there was no data point of Xe-133 measurements available, which is located on the Japanese island. This makes it very questionable if the meteorological data is accurate enough to draw conclusions with an accuracy in the range of hours. Furthermore, a slight underestimation of turbulent dispersion can easily fake an earlier release, too.

(2) The same uncertainty may affect your statement, that the drop in Cs-137 emissions is correlated with the start of the cooling of the spent fuel pool of unit 4. There was a video sequence taken from TEPCO by an underwater cam in this pool showing no visible fuel element damage.

Please, comment on both queries. In view of the interpretation of the results as they were published, it would be indicated to directly mark the time of the seismic shock and of the arrival of the tsunami in the plot of the reconstructed releases (Fig. 4), see attm. Error bars should be added, if available, also in direction of the time axis.

Best

Michael Prasser

Interactive comment on *Atmos. Chem. Phys. Discuss.*, 11, 28319, 2011.

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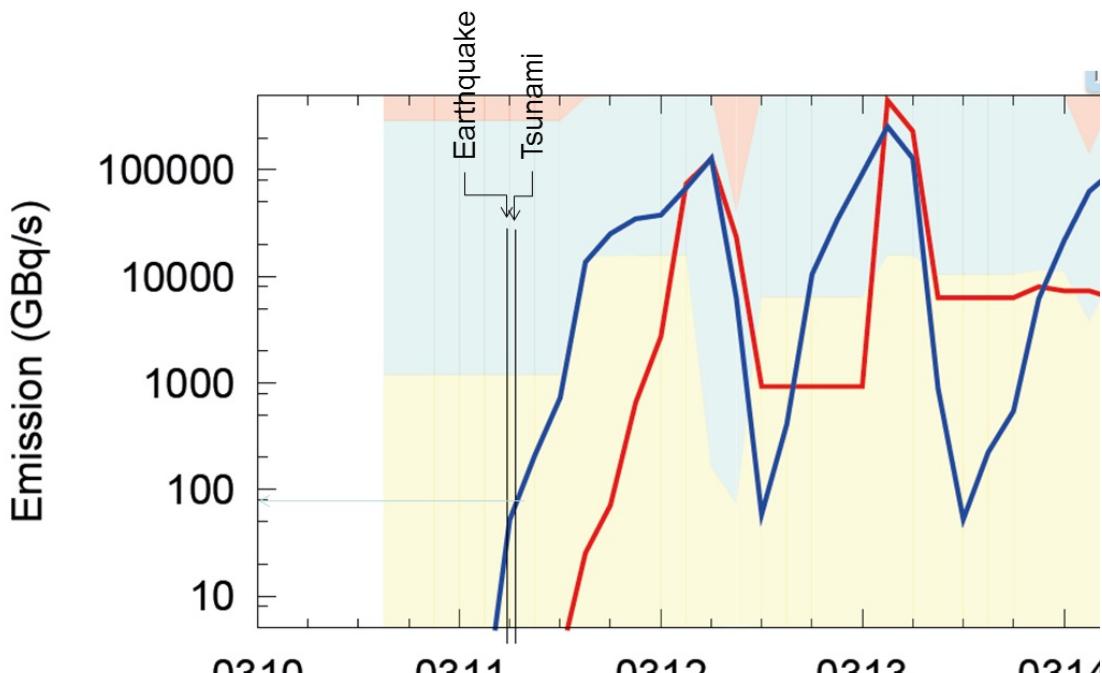
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Stohl et al., *Atmos. Chem. Phys. Discuss.*, 11, 28319–28394, 2011

Fig. 1. Timing of seismic shock and tsunami added to Fig. 4

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