

Interactive comment on “Isotope fractionation between dissolved and suspended particulate Fe in the oxic and anoxic water column of the Baltic Sea” by M. Staubwasser et al.

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We thank Dr Severmann for her time invested in reviewing this manuscript. Dr Severmann's comments are centered around four aspects of our manuscript: 1) the general information on the Baltic Sea redox state and the overall redox profile; 2) processes related to the formation of Fe-sulfides and the Fe source in the basin's euxinic bottom layer; 3) the controls of Fe(II)-oxidation rates in the zone of the FeSPM maximum; and 4) the origin of low $\delta^{56}\text{Fe}$ of suspended Fe at 100 m. Dr Severmann suggests an alternative interpretation with diffusive Fe efflux from shallow (shelf) oxic sediments surrounding the basin, subsequent oxidation, and suspended transport to the basin to

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form an Fe-rich particle maximum, based on her previous publication (Severmann et al. 2008). Additional comments relate to details of a reference on Fe isotope fractionation in hydrothermal plumes cited by us.

Please find our detailed response in the attached file.

Please also note the supplement to this comment:

<http://www.biogeosciences-discuss.net/9/C2734/2012/bgd-9-C2734-2012-supplement.pdf>

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