

## ***Interactive comment on “Impact of variable sea-water conductivity on motional induction simulated with an OGCM” by C. Irrgang et al.***

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We thank the reviewer for carefully reading our manuscript and providing many helpful scientific and technical remarks, which helped to improve this manuscript.

- "I recommended slightly altering Figure 5: have the current figure be part B and make part A a figure showing the results of the magnetic field strength for spatially-variable conductivity in terms of nT."

We thought about an optimal way to visually demonstrate the findings of this study. Our premise was to keep the manuscript as clean as possible, without showing any redundant information. The combination of the figures 4 (absolute values of the temporal variability of the ocean induced magnetic field) and 5 (relative influence of the sea-

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water conductivity on the temporal variability) provide a complete representation of the influence of sea-water conductivity on motional induction. For this reason, we think that including an additional figure for the absolute values in nano Tesla is redundant.

- "Manoj et al (2006) used a mean sea-water conductivity for obtaining the exciting current, but then a incorporated spatially variable ocean conductivity scheme as part of the laterally varying model shell in which the exciting current was then evaluated."

We clarified this part of the manuscript and added the information about the spatially variable sea-water conductivity in the shell model of Manoj et al. (2006). Thank you.

Technical corrections:

We included all technical corrections proposed by the reviewer.

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