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Interactive comment on "Model reactions and natural occurrence of furans from hypersaline environments" *by* T. Krause et al.

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Thank you for your comment and suggestions on the manuscript. We will prepare a scheme showing the degradation of phenol and catechol derivatives to the respective furans via Fenton chemistry for the final paper. Main products of aromatic hydrocarbon degradation by Fenton chemistry are dicarboxylic acids. After radical induced ring cleavage the terminal carbons are readily oxidised to carboxylic moieties. In several oxidative decarboxylation steps the chain length decreases till oxalic acid is formed (Studenroth et al., 2013). The furan formation is a side reaction in this system that was optimised by using varying amounts of reactants. The presence of unreacted educt can be ruled out as increasing amounts of oxidants did not yield more furan but less promoting oxidation to carboxylic acids and further on to CO2. An abridged explana-

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tion will be added to the final paper. The correlation between furan formation and pH value is indeed less significant compared to iron and organic carbon, though there is an increase in furan formation at lower pH values of the sediments indicated by the linear regression shown in the graph. While furan concentration of up to 10 ng/g were detected in all samples the majority of circumneutral samples showed overall subdued furan release, whereas its release from acidic samples were typically high. Deviations from this trend could result from the complex sample matrix. A more detailed description of Fig.4 B will be given in the final paper making clear that the correlation between furan and pH is not as significant as with other parameters. The numbering of figures will be corrected within the text to show the same capital letters used within the figures and captions.

Reference Studenroth, S., Huber, S. G., Kotte, K., and Schöler, H. F.: Natural abiotic formation of oxalic acid in soils: Results from aromatic model compounds and soil samples, Environ. Sci. Technol., 47, 1323-1329, doi:10.1021/es304208a, 2013.

Interactive comment on Biogeosciences Discuss., 10, 17439, 2013.