

Interactive comment on “Stable isotope study of a new chondrichthyan fauna (Kimmeridgian, Porrentruy, Swiss Jura): an unusual freshwater-influenced isotopic composition for the hybodont shark *Asteracanthus*” by L. Leuzinger et al.

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The authors want to thank the referee Jan Fischer for his well-founded revision that will undoubtedly improve the quality of the paper, offering better coherence and clarity. The comments were all relevant, clear and minutely detailed.

We answered to all of them point by point in the Supplementary file. References were added every time required to provide a better background. We really appreciated the

C6470

references provided by the referee, especially on modern sharks.

About the diagenesis issue, since there is currently no way to be 100% sure about the good preservation of fossil bioapatite, the authors first focused on different type of tissues (e.g., enameloid versus dentine) and on the differences in their isotopic values in this paper. In case of diagenetic alteration, a similar isotopic signature for all the material analysed is expected in our settings, which is not the case here (see response to comments for more detail). Following the comments of the referee, we gave more information on the methods used to check for the preservation (trace elements, cathodoluminescence). We extended the discussion in the section 5.1.

We also provide a picture of what we consider a juvenile tooth of *Asteracanthus*, directly comparable to the adult tooth figured in Fig. 3, and also clarify our opinion in the text, with arguments against a size difference due to heterodonty.

Please note that the page numbers of the comments in our response file correspond to those of the Supplement file "Referee Comment RC C5631" by Jan Fischer, and differ from the page numbers of the Discussion paper.

We hope the referee will be convinced and satisfied with our arguments and corrections.

Please also note the supplement to this comment:

<http://www.biogeosciences-discuss.net/12/C6470/2015/bgd-12-C6470-2015-supplement.pdf>

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