

## ***Interactive comment on “Age depth-model for the past 630 ka in Lake Ohrid (Macedonia/Albania) based on cyclostratigraphic analysis of downhole gamma ray data” by H. Baumgarten et al.***

### **Anonymous Referee #2**

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I think your correlations are correct and straightforward and because the LR04 record is astronomically tuned this provides a solid age model on its own for Lake Ohrid.

I do not understand why you bring in the tephrostratigraphy component. These tephra layers do come from outside Lake Ohrid and as such bring in extra potential correlation errors. I do not see why this is useful and believe it makes your story weaker.

Additional comments: Please use ka (1000 years) and Ma (million years) for ages and kyr (1000 years) and Myr (million years) for duration. Change throughout the text. So give sed. rates in cm/kyr.

The title should read: Age-depth model (instead of Age depth-model) for the past 630 C7662

kyr. And I would also not use the term Macedonia for the FYROM as this may upset some other communities in the area.

Abstract: please write “can thus/only/potentially be” instead of “can be thus” (page 1 line 21; page 3 line 17 and line 22) Do you have an explanation why the sed. rates shift exactly at 110 mblf?

Suggestions: Page 3 line 20: use another word for “trigger” (e.g. reflect) Page 5 line 1-2: Give references and explain in more detail what age control is already present. Page 6 line 23-27: “in conjunction with age control points from tephra layers”. . . . They need to be identified in the core by visual description or by physical properties”. I think this is a bit misleading paragraph as it suggests you present ages from tephra of their Lake Ohrid core, which is not the case! Page 7 lines 21-25: Why do you describe all this if at the end you tell us it could not be used? Suggest to delete the part from “Therefore. . . . .However,” and start again with “Porosity. . . . . Page 8 lines 9-12: It is unclear to me why and how the eight age depth-points have been brought into the Lake Ohrid record. I do not see the added value here. Moreover, the reliability of all these references are not discussed. For instance how solid are all these ages, how reliable is their correlation, etc. Why do you need these “anchor points”? Page 9 equations??? Why do this? This is elementary school maths! Page 12 line 4-5: “Further interpretation was postponed” reads as you want to slice the results into another paper. Suggest delete or give some interpretations.

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Interactive comment on Biogeosciences Discuss., 12, 7671, 2015.