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Biogeosciences Discussions

# *Interactive comment on* "Long-term macrobioerosion in the Mediterranean Sea assessed by micro-computed tomography" *by* C. Färber et al.

**Anonymous Referee #2**

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Long-term macrobioerosion in the Mediterranean Sea assessed by micro-computed tomography" Färber et al

Referee's suggestions

The study is very interesting and gives, for the first time, data about long-term marine bioerosion in temperate waters; the use of m-CT for quantifying bioerosion rates is really promising.

Page 3 line 3. 46 blocks of marble and limestone were used for the experiment and placed on the sea floor. You chose 20 blocks for your analysis. Could you detail the lithology of the chosen blocks?



Page 3 line 13, page 8 line 17. You cut blocks to a size of 10x10 cm. What is their thickness? What is the size of the blocks used for micro-CT? is it 90x90x18 mm as reported in the legends? How did you choose the parts of the blocks for micro-CT analysis?

Pag 6 line 23- Cliona schmidti. See comments for the legend of figure 3. line 24 and followings. When you quote the figure 6 with the spicules of the sponges, please quote also the corresponding figs of the biorosion traces got with m-CT.

Discussion page 8. Could you consider if the lithology of the blocks affect the results of the erosion rates?

page 9 lines 15-18. Please add comments about the dominance of sponges in the excavated blocks, discussing the succession phase of bioeroders. Sponges may precede worms and bivalves in colonisation (e.g. Hutchings, 1986). This could be true only for tropical waters, and moreover, these data about successional phases refer to shorter time gaps. But in temperate areas bioerosion rates are slow (for Teredinidae is demonstrated). Is it for this reason that worms are scarce? Moreover, these blocks are small (10x10 cm). Likely, they moved and rolled on the bottom. Worms (with singles openings) could have been smothered by mud, and the vacant holes occupied by sponges.

page 10 line 20-25. Is it your case? the different lithology of the blocks could have influenced also the erosion traces?

Figure 1. Show the Mediterranean sea and where Rhodes is. Figure 3. Could be possible that in B two distinct traces are presents? Apart E. ovula, there are other cylindrical chambers arranged in chains, very similar to fig. 2C (E. cateriformis). In fact, the erosion traces in 2C are attributed to C. schmidti, and the traces in figure. 3B to two distinct species: Cliona viridis and C. schmidti. The chambers arranged in chains in Fig. 3C could belong to C. schmidti and the others, globose-ovoid to C. viridis. So the sentence " Cliona schmidtii (Ridley, 1881) was recognised as the trace maker

of E. cateniformis and E. ovula “ should be reconsidered.

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