

## ***Interactive comment on “A new model for biomineralization and trace-element signatures of foraminifera tests” by G. Nehrke et al.***

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I have the same concerns as the other referee concerning this study. In particular, I wonder how this model could explain the  $\delta^{11}\text{B}$  data obtained in foraminifera, i.e. indications of pH variations that were interpreted as different pH in seawater vacuoles. I think that this is something that should be discussed. I'd like also that the authors show how their model works with other trace element and isotopic ratios that were measured in foraminifera. What would be the implications of your model on the isotopic compositions of Mg in forams?

What are also the main implications for paleo-reconstructions of environmental conditions? This aspect is mentioned in the introduction, but was not developed after that.

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I have few more comments:

L18 (9799): the reference 'Bentov and Erez (2006)' should be added.

Results section: Could you give some ideas about the distribution of the total number of vacuoles volume for the specimens studied? Is this a continuous distribution? Here we just know the maximum volume.

L14 (9802): It seems that there is also some new layer formed inside all the previous chambers (figure 2C). How is it explained?

L23-26 (9805): It was, for example, done in Segev and Erez (2006), so the results could be used to test the different assumptions about Mg pathways.

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**BGD**

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