

Guy Munhoven comment

In the following, referee comments are indicated in *italic Times New Roman* font while our responses are indented and appear in normal Ariel font.

I would like to point out that there is already a model called MEDUSA (Model of Early Diagenesis in the Upper Sediment (A)), published by Munhoven (2007). That model has been used for studying the evolution of the carbon cycle over glacial-interglacial time scales (Munhoven, 2007, 2010). It is, however, also being actively used for studying the impact of future ocean acidification on carbon cycling between the ocean, atmosphere and the surface sediment (e.g., Munhoven, 2008, 2009).

Because of this overlap in the research areas, I feel that, having two models with the same name will lead to considerable confusion.

We are grateful for the contributor for bringing this overlap to our attention. Though we appreciate the possibility that confusion may occur, we would argue that our models deal with sufficiently different parts of the Earth system (pelagic ocean vs. seafloor sediments) that this is unlikely.

We are also somewhat reluctant to modify the name of our model as it has already been published as MEDUSA, and features in a number of funded and proposed research grants. As such, change is also liable to result in confusion.

However, we could consider altering the name of our model to something such as MEDUSA-1, which may be preferable in any case because of the likelihood of future versions. Particularly since the contributor's nomenclature implies a successor model called MEDUSB.