

## ***Interactive comment on “Laminae type and possible mechanisms for the formation of laminated sediments in the Shaban Deep, northern Red Sea” by I. A. Seeberg-Elverfeldt et al.***

**Anonymous Referee #2**

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The paper presents a detailed analysis of the processes involved in the formation and preservation of different kinds of laminations in sediments from a brine-filled basin. Given limits on benthic disturbance based on the high salinity of the brine, preservation of structures as deposited is to be expected. The strength of this paper is that it goes well beyond issues of preservation to debate the many possible mechanisms involved in the initial development of the many types and combinations of laminations. This approach considers the initial production of the particulates and their rapid sinking, as well as processes in the water column that help in the ultimate formation of fine-scale laminations. The authors' approach, via very close visual scrutiny of the laminae types through SEM, really is the best way to address these questions.

In each case described, the formation of aggregates of biological particles and in-

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creased sinking rates is critical in setting the stage for formation of laminations. Equally important in the Red Sea however, is the presence of the seawater-brine interface (SBI), as a surface upon which particulates accumulate, increasing in concentration until they reach a point that they settle to the sea floor. In considering the formation of laminated sediments this was not something I had considered previously, because an interface like the SBI (as present in the Shaban Deep), is not very common. Certainly it is not a feature present in many places where highly laminated sediments occur, so is not essential for the formation of laminations. Given this, I am wondering how the model presented here must be modified to explain the occurrence of laminated sediments elsewhere.

One other issue that I found quite interesting is the discussion of the formation of the silt accumulations via the disaggregation of silt particles previously accumulated as the tests of agglutinated foraminifera. I was wondering what additional work could be done to evaluate the likelihood of this source for the silt and what the authors recommend to others who work in similar sediments. What should we look for to assess the role of agglutinated forams?

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