

## ***Interactive comment on “Seasonal variability of radiation tide in Gulf of Riga” by Vilnis Frishfelds et al.***

### **Anonymous Referee #1**

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Causes for diurnal oscillations in the water level in the Gulf of Riga are investigated, and a prominent role of tides and sea breezes is postulated.

In its current form I have to advise that this paper is rejected by Ocean Science. The primary reasons for this is that it is very hard to follow the logic of the paper, to understand how the experiments were carried out and to understand what the figures show. Some examples are that at times it appears that the authors argue that atmospheric forcing makes tides (or perhaps diurnal oscillations in general) weaker, and at other times stronger. Tidal amplitudes are calculated from a model (at times), and it says that in the model tidal stress is implemented through unresolved bottom shear, see Canuto. I have no ideas what that means. Moreover, the usage of citations like in the aforementioned example where things are said to be this or that according to him/her

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without giving a proper explanations is problematic throughout the paper. Lastly, several figs are said to show daily variations of sea level, and they are often negative. I would have expected that a variation to be a positive quantity (e.g. a standard deviation), I don't find the definition of variation in the paper. I also can't follow why the authors believe S1 to be more important than K1 and O1.

To a large degree the problems of the paper may be owing to linguistic shortcomings, and the paper requires substantial work to improve both readability and traceability.

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