

Interactive comment on “A new parameterisation of salinity advection to prevent stratification from running away in a simple estuarine model” by S. Blaise and E. Deleersnijder

S. Blaise and E. Deleersnijder

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The reviewer comments are in italics, while the authors reply is in bold font.

This paper presents a clever approach to 1D modeling of estuarine stratification that solves the problem of "runaway" stratification. The paper is well written and the results look good. Given that there are still some good problems left to work out with the 1D model, the paper will be of interest to estuarine physical oceanographers. The paper is fine as far as it goes and can be published as it is as a short paper. The question remains however of how the new parameterization compares with 2D/3D models in a realistic set up. Is the 1D approach with the modified salinity gradient the physically (not just mathematically) correct approach to representing how the salinity gradient

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changes as the estuary stratifies?

A comparison with 2d/3d models is a good idea, but we think it is beyond the scope of this paper which focuses on fixing a well-known deficiency of idealised, one-dimensional models.

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