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Ocean Science
Discussions

Interactive comment on "Numerical issues of the Total Exchange Flow (TEF) analysis framework for quantifying estuarine circulation" *by* Marvin Lorenz et al.

Anonymous Referee #1

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This is a very useful manuscript that provides a detailed comparison of two methods to calculate the total exchange flow from numerical simulations. The paper ends with a best practice recipe to do these calculations. I would recommend that this paper be published essentially in its current form. I do have a few minor questions which perhaps they can address in the final version.

1) While the authors suggest that the " dividing salinity method" is preferred to the "sign method" but the former requires a algoritm to find extrema of Q. While they provide a detailed description of the algorithm they :"came up with", that particular working ("that we came up with") made me wonder if they feel there are shortcomings in this

method. If soâĂŤplease elaborate. If notâĂŤperhaps they could change the wording to something like. .." We provide a detailed description of an algorithm to obtain extrema of Q which is required to determing the dividing salinity values". . .

2) Section 4.'1 line 25. "The bulk values change considerably"âĂŤI assume they mean s, Q. While the do show more variability than the dividing salinity methodâĂŤthey only vary by a few percent. . . so referring to it as considerable change seems a bit severe. Also shouldn't the bulk quantities be noted as Qin,Sin, Qout and Sout?

3)The map does not include the indicating the locations of places mentioned in the text (Gotland Island, Gotland Basin, Bothnian Bay)

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