

Interactive comment on “Model-driven optimization of coastal sea observatories through data assimilation in a finite element hydrodynamic model (SHYFEM v.7_5_65)” by Christian Ferrarin et al.

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Question: In the paragraph beginning on line 201, it would be beneficial to clarify how unforced boundary conditions are represented within the shallow water model. Forced boundaries are mentioned, but the implementation of unforced boundary conditions (for example in urban areas) is unclear. Are free-slip conditions used?

Response: Unforced boundaries are solid boundaries that are implemented in the model with a free slip condition. The only condition that is enforced on these bound-

C1

aries are the no-flux condition through these boundaries. No-slip conditions can also be implemented by the model, however, the resolution of the numerical grid is much too coarse for these kind of condition.

We have inserted the following sentence at line 84:

At the boundaries, either water levels are prescribed at the open boundaries or the free-slip condition is implemented at solid (closed) boundaries.

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C2