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Ocean Science
Discussions

Interactive comment on "On the use of the Strouhal/Stokes number to explain the dynamics and water column structure on shelf seas" *by* A. J. Souza

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Explaining the dynamics and water column structure in shelf seas via the Strouhal/Stokes No.

A J Souza os 2012 117

This is an excellent paper – linking historical developments of related theories to the distribution of thermal fronts in the Irish Sea. With a little more work (along the lines appended ?) this paper could become a 'classic'.

1. Improve the English

2. Expand Section 2 to enhance accessibility (presently somewhat esoteric), introducing a schematic diagram and linking the salient parameters directly to terms in the dynamical and mixing equations.

3. Explain how turbulence is calculated in the associated POL model and comment on independence / inter-relatedness of these assumptions and those in the above theories.

4. Use remote-sensing observations of tidal fronts to more rigorously evaluate the present approach (perhaps also considering long-standing issues such as spring-neap variations in frontal locations).

5. Digitise the present pictorial intercomparisons (along the observed frontal locations) to illustrate how the range of theories explain observations (perhaps using tw0-axis (velocity and ellipticity?) contour plots – to provide both clearer quantitative comparisons and impacts of the salient parameters.

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Interactive comment on Ocean Sci. Discuss., 9, 3723, 2012.