

Interactive comment on “A simple and self-consistent geostrophic-force-balance model of the thermohaline circulation with boundary mixing” by J. Callies and J. Marotzke

Anonymous Referee #1

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The manuscript describes a two-plane model of the thermohaline circulation (THC) akin to the North Atlantic which shows all salient properties diagnosed from a primitive equation model with boundary-mixing. The relative simplicity and self-consistency of the model allows for, e.g., quantitative and detailed analyses of the THC within the parameter space of vertical diffusivity and imposed meridional surface density difference. This is very interesting new work and should be published by Ocean Science. I have no further comments on details and suggest that the manuscript should be "accepted as is".

Interactive comment on Ocean Sci. Discuss., 8, 1819, 2011.

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