

## ***Interactive comment on “The Ekman spiral for piecewise-uniform diffusivity” by David G. Dritschel et al.***

**Anonymous Referee #3**

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This manuscript considers the classical problem of the flow near the ocean surface driven by wind stress. Ekman’s classical theoretical model predicts a surface current deflected by  $45^\circ$  with respect to the wind direction, but in a number of cases observations reveal substantial deviations from this theoretical prediction. The authors present a solution for a piecewise-constant eddy viscosity, as a first step to understand how the surface deflection angle depends on the vertical profile of the eddy viscosity. The model described is restricted to the case of two layers.

The model is relatively simple, and forms in fact a straightforward extension of Ekman’s original model. The results are interesting enough to warrant publication.

The paper is well written, very concise, and clear. I recommend publication of this paper in its present form.

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Just one minor point: I would replace “diffusivity” in the title by “(eddy) viscosity”.

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