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Interactive comment on "Technical Note: Volume Transport Equations in Combined Sverdrup-Stommel-Munk Dynamics without Level of no Motion" *by* Peter C. Chu

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In this article the author ostensibly extends the Sverdrup relation to include a "geostrophic" component and calculates "extended" transport streamfunctions for the real ocean using climatological data. The article is fundamentally flawed for the following reasons:

1) The premise of the article is fallacious because Sverdrup meridional transport is of course geostrophically balanced, including in the original gyre circulation theories of Stommel (1948) and Munk (1950). The author cites these articles in the first line of the abstract and the first line of the introduction, so it is perplexing that the manuscript could be so fundamentally confused on this point.

2) The author's additional "geostrophic" contribution to the Sverdrup transport results

from a mathematical error in equations (14) and (20), which incorrectly assume that the depth-integrated geostrophic transport is non-divergent.

3) The correct version of this additional contribution is the bottom pressure torque, whose contribution to the vortically-forced ocean circulation has already been discussed extensively in the JEBAR literature. The manuscript under review adds nothing to this literature.

There are various other issues with the work, ranging from the formulation of equations (1-2) to the many spelling and grammar errors in the manuscript, but I have chosen to omit them from this review because they will almost certainly be inconsequential.

The fundamental flaws listed above make the manuscript unpublishable in any form, so my recommendation is that the editor reject the manuscript.

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