Ocean Science Discussions

Ocean Sci. Discuss., referee comment RC2
https://doi.org/10.5194/os-2022-5-RC2, 2022
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Comment on os-2022-5

Anonymous Referee #2

Referee comment on "Analytical solution of the ray equations of Hamilton for Rossby waves on stationary shear flows" by Vladimir Gnevyshev and Tatyana Belonenko, Ocean Sci. Discuss., https://doi.org/10.5194/os-2022-5-RC2, 2022

I read this manuscript and doubted my eyes. I felt like I was back in the world half a century ago. In general, theory is meaningful when it can explain the actual phenomenon concisely or when it is effective for interpreting observations and experimental data from a new perspective. This paper is not of that sort. It deals with the behavior of Rossby waves in a linear shear flow, showing the sameness between the ray theory based on the simple dispersion relation of Rossby waves considering the shear frequency and the solution of the Cauchy problem. This problem was calculated almost half a century ago using a coordinate system that follows the shear flow, and several papers were already published even with pointing out the limitations of introducing the wave packet, as cited in the references. Therefore, in modern times, it is just an exercise for college students studying wave packets and ray theory for Rossby waves in a shear flow.

Unfortunately, this paper is not worth publishing in Ocean Science.