

Review of the manuscript ‘Observations of tracer ventilation in the Cape Basin, Agulhas Current Retroflexion’ by Koets et al.

This study uses glider observations, including physical and biogeochemical tracers, to investigate the distribution and intensity of ventilation events in the Agulhas Retrocession Current. The manuscript is well written and logically coherent. It is a fascinating study. However, it is too descriptive, so additional dynamics should be included to enrich and quantify the study further. Once the comments have been addressed, I suggest that the manuscript can be published. My detailed comments are below.

Major comments

1. The 2D quasi-geostrophic omega equation can be used to estimate the vertical velocities along the glider section and further demonstrate the vertical exchange of waters and tracers (Siegelman et al., 2020).
2. How to quantify the difference between diapycnal and isopycnal transport (mixing) in the study.
3. The frontogenesis function (Siegelman, 2020) can also be estimated along the glider section to investigate its relationship with ventilation and related dynamic processes.

Minor comments

1. Line 165, (x,y,t) to (x, y, t) .
2. Line 175-180, the S_a , CT are absolute salinity and conservative temperature, respectively. This should be explained first.
3. Line 186, “AAIW - $S_a < 34.6 \text{ g kg}^{-1}$ ” revised to “AAIW, $S_a < 34.6 \text{ g kg}^{-1}$ ”?