Supplemental Material

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Energetic Submesoscale Dynamics in the Ocean Interior

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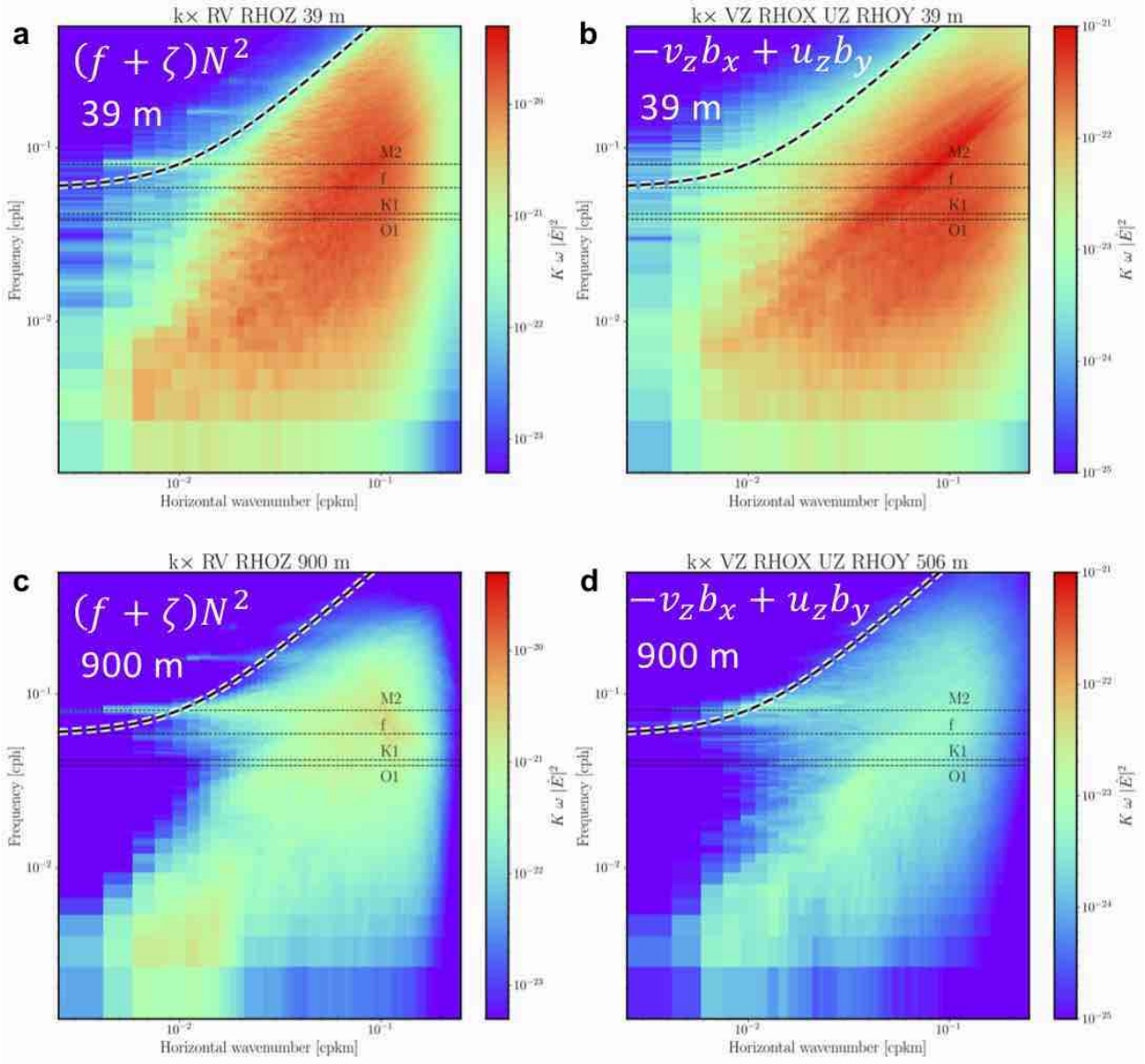

770 Fig. S1. Wavenumber-frequency spectra computed from October 15, 2012 to November 15, 2012 at 39 m
771 (top panels) and 900 m (bottom panels) of a,c) Ertel PV's first component $(f+\zeta)N^2$, b,d) Ertel PV' second
772 component $-v_z\, b_x + u_z\, b_y$. Consistent with the features observed in physical space, the variance of Ertel PV's
773 first component is greater than that of Ertel PV' second component by approximately an order of magnitude.
774 Note also that the only substantial difference between the w-f spectra of $(f+\zeta)N^2$ and ζ (Figure 5c,g) is the
775 larger impact of IGWs on $(f+\zeta)N^2$ that is enabled by the background stratification.

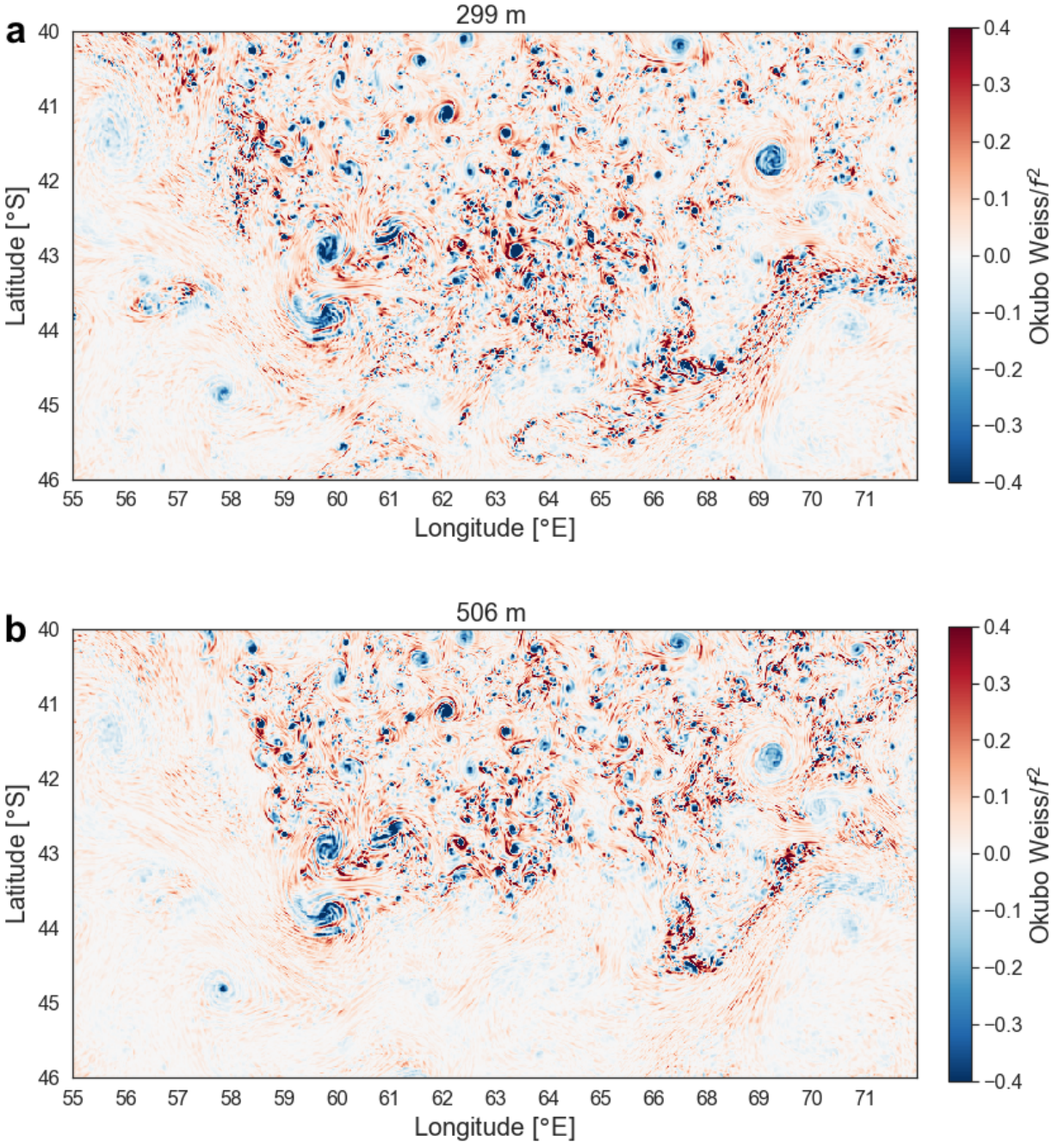

Fig. S2. Maps of the Okubo-Weiss quantity normalized by f^2 at a) 299 m and b) 506 m.