Supplemental Material

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Wave–Current Interactions at Meso- and Submesoscales: Insights from Idealized Numerical Simulations
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Supplemental material for: "Wave-Current Interactions at Meso and Submesoscales: Insights from Idealized Numerical Simulations"

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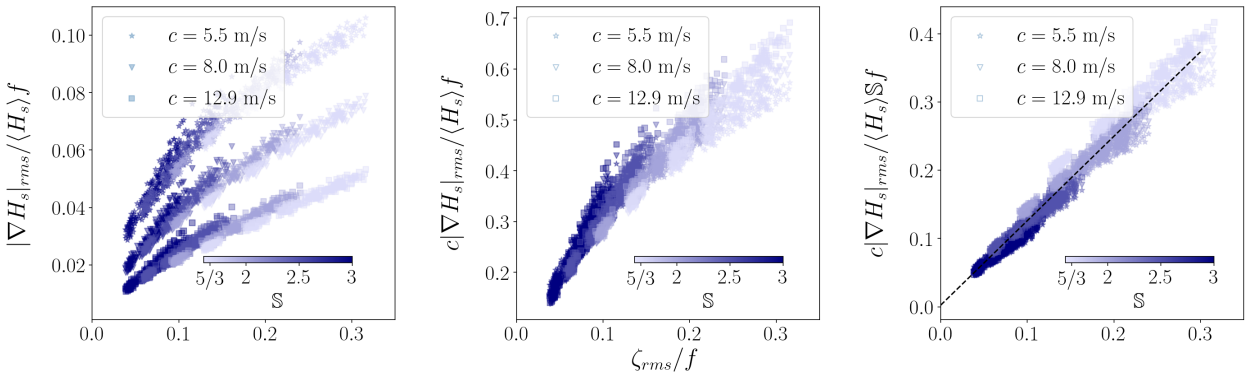

Figure 1: Collapsing of the data under the scaling given by equation (15) in the main manuscript. For this figure, we only show results from experiments run with the synthetic currents and with $KE = 0.01\text{m/s}^2$. The left panel shows the relationship in (15) without scaling by the group speed c and spectral slope $\mathbb{S}$. The middle panel shows the relationship in (15) scaled by the group speed, but not by the spectral slope. The right panel shows the full relationship.

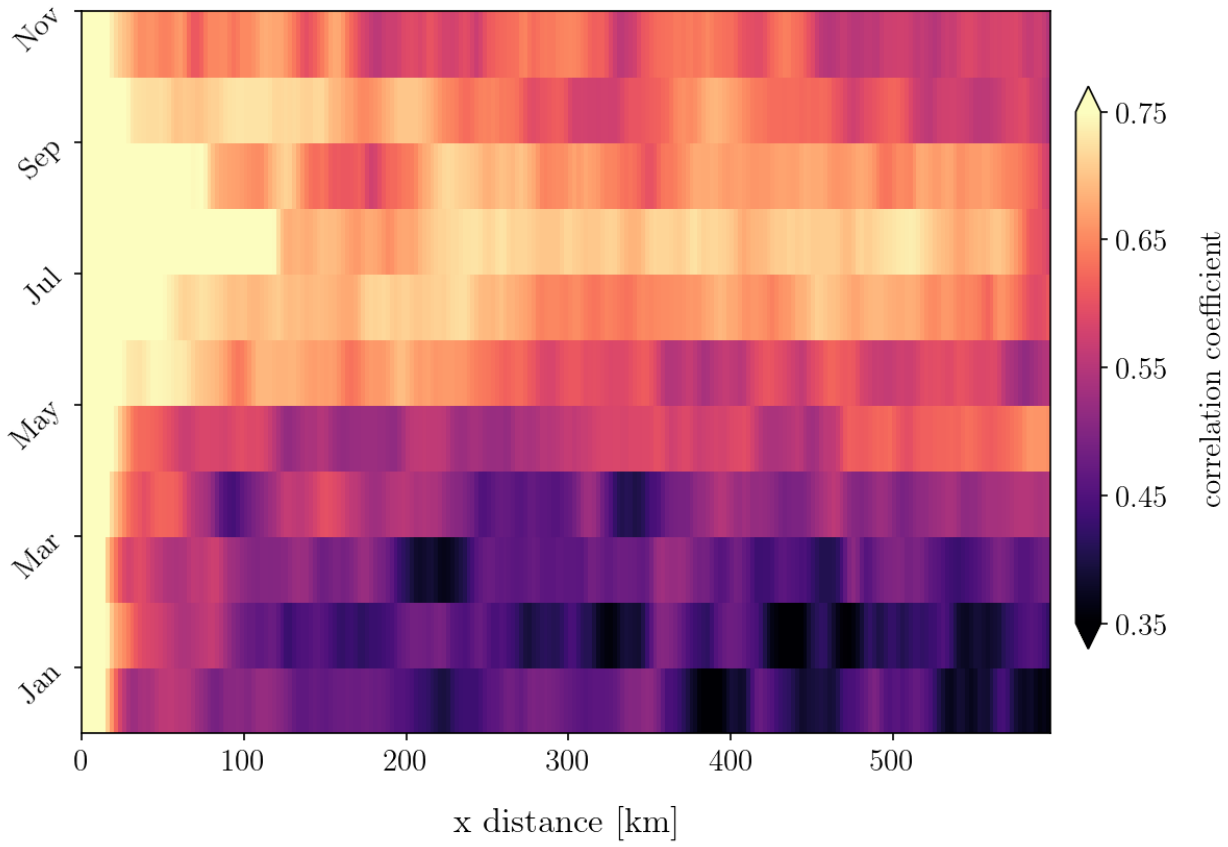

Figure 2: Correlation coefficient between the left and right hand side of equation (17) in the main manuscript calculated as a function of month and distance from the origin ($x = 0$), for the model runs forced by the llc4320 currents. In each bin the correlation was computed across over 28000 points. Note that the correlation coeffitient is higher near the origin and during summer, when the vorticity in the llc4320 in the California Current region is smaller.