



AMS

American Meteorological Society

Supplemental Material

Journal of Physical Oceanography

Wave–Current Interactions at Meso- and Submesoscales: Insights from Idealized Numerical Simulations

<https://doi.org/10.1175/JPO-D-20-0151.1>

© [Copyright 2020 American Meteorological Society](#) (AMS)

For permission to reuse any portion of this work, please contact permissions@ametsoc.org. Any use of material in this work that is determined to be “fair use” under Section 107 of the U.S. Copyright Act (17 USC §107) or that satisfies the conditions specified in Section 108 of the U.S. Copyright Act (17 USC §108) does not require AMS’s permission. Republication, systematic reproduction, posting in electronic form, such as on a website or in a searchable database, or other uses of this material, except as exempted by the above statement, requires written permission or a license from AMS. All AMS journals and monograph publications are registered with the Copyright Clearance Center (<https://www.copyright.com>). Additional details are provided in the AMS Copyright Policy statement, available on the AMS website (<https://www.ametsoc.org/PUBSCopyrightPolicy>).

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

A. B. Villas Bôas, B. D. Cornuelle, M. R. Mazloff, S. T. Gille and F. Ardhuin

September 20, 2020

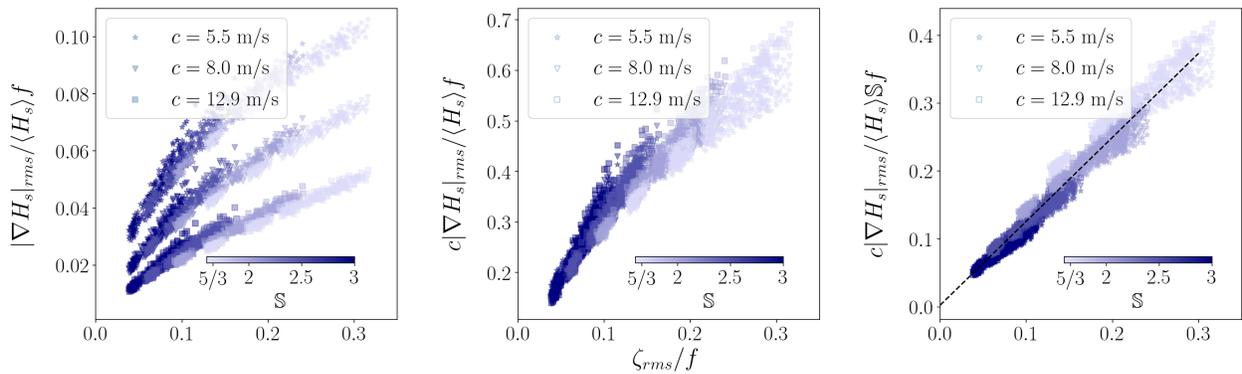


Figure 1: Collapsing of the data under the scaling given by equation (15) in the main manuscript. For this figure, we only show results from experiments run with the synthetic currents and with $KE = 0.01\text{m/s}^2$. The left panel shows the relationship in (15) without scaling by the group speed c and spectral slope 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.

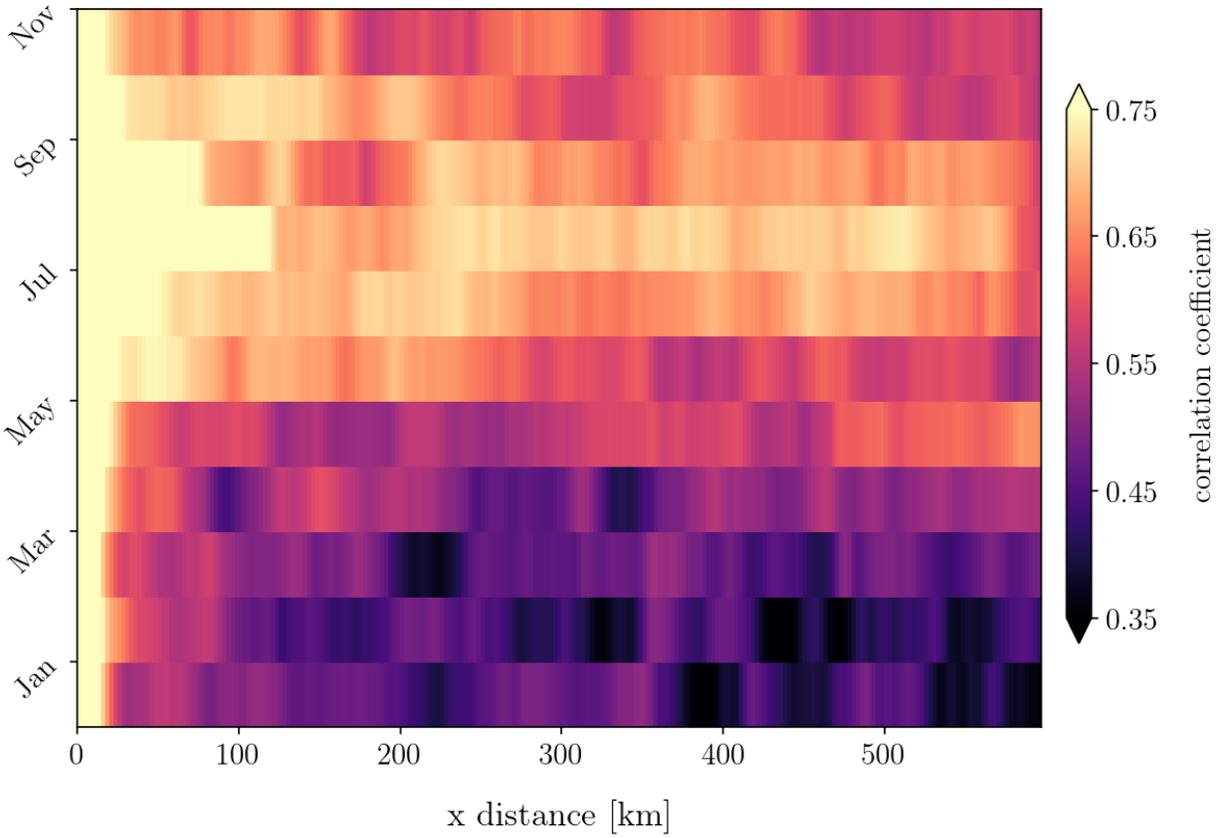


Figure 2: Correlation coefficient between the left and right hand side of equation (17) in the main manuscript calculated as a function of month and distance from the origin ($x = 0$), for the model runs forced by the llc4320 currents. In each bin the correlation was computed across over 28000 points.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