CORRIGENDUM

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A bug in the numerical model used by Whitt and Taylor (2017) has been discovered, wherein the vertical molecular viscous momentum flux was set to zero at the top boundary during the calculation of the explicit part of the viscous stress in the Crank-Nicholson time-stepping scheme.[1] The molecular viscosity is everywhere negligible compared to the subgrid-scale viscosity. However, as a result of this bug, the values of the surface stress $\boldsymbol{\tau}$ and mixed layer buoyancy flux ratio R_{ML} plotted in Fig. 1 of Whitt and Taylor (2017) were incorrect. A corrected version of Fig. 1 is below, where $\boldsymbol{\tau}$ and R_{ML} are reduced by a factor of two in Fig. 1 (b), but Fig. 1 (a) is the same as in Whitt and Taylor (2017).

In addition, a new version of the strong buoyancy flux-forced front simulation was conducted with an air-sea buoyancy flux $B_A(t)$ reduced by a factor of two so that the associated R_{ML} is equivalent to that associated with the wind-forced front and plotted correctly in Fig. 1 (b) here. Revised Figs. 2 and 5 below include results from the new simulation of the strong buoyancy flux-forced front. In particular, Fig. 2 (c) and all the red curves in Fig. 5 correspond to the new simulation where the surface buoyancy flux matches the corrected Ekman buoyancy flux. Other panels and lines are the same as in Whitt and Taylor (2017)

Although this correction implies that the simulated wind stress was a factor of two weaker than the observed conditions, reported by Rumyantseva et al. (2015), the main conclusions of the paper do not change. In particular, the corrected value of the mixed layer buoyancy flux ratio, R_{ML}, exceeds 10 for most of the simulated storm event. The authors regret the error.

[1]The bug was introduced when the LES package was added to the newly parallelized version of DIABLO. The bug does not affect any other published results using DIABLO.

REFERENCES

Rumyantseva, A., N. Lucas, T. Rippeth, A. Martin, S. C. Painter, T. J. Boyd, and S. Henson, 2015: Ocean nutrient pathways associated with the passage of a storm. *Global Biogeochem. Cycles*, **29 (8)**, 1179–1189.

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List of Figures

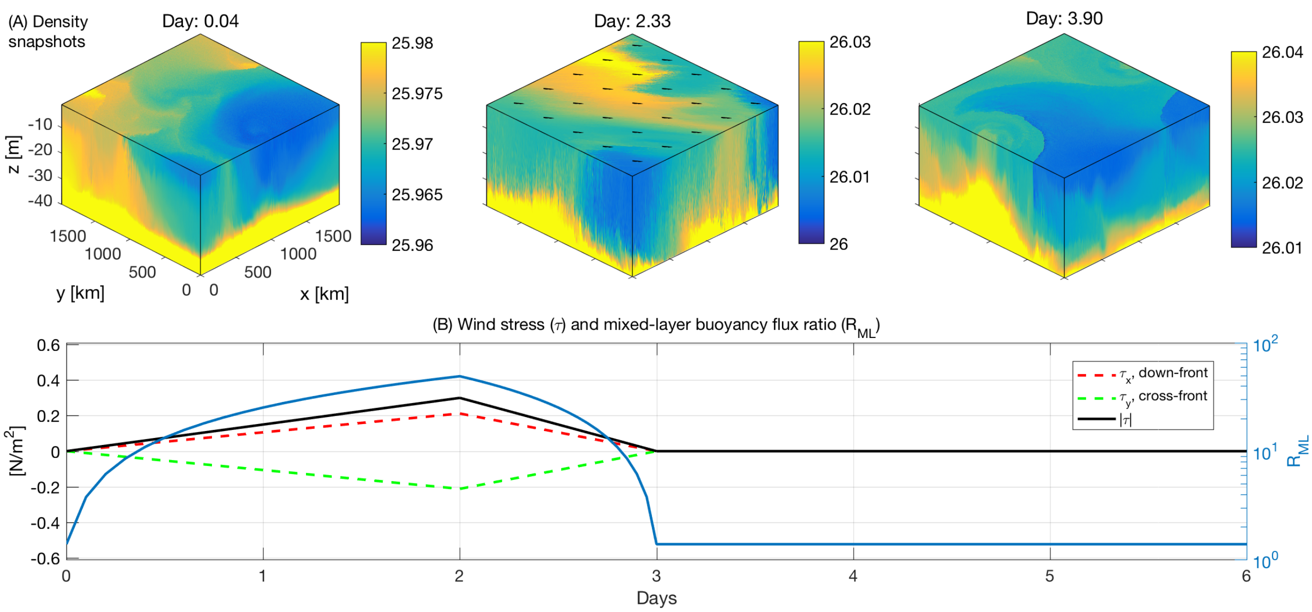

FIG. 1. (a) Snapshots of density and (b) time series of wind stress magnitude (black) and vector components (dashed red and green) as well as the mixed layer buoyancy flux ratio R_{ML} (blue) [see (1)]. Black vectors in the snapshot at day 2.33 indicate the direction of the wind during the storm.

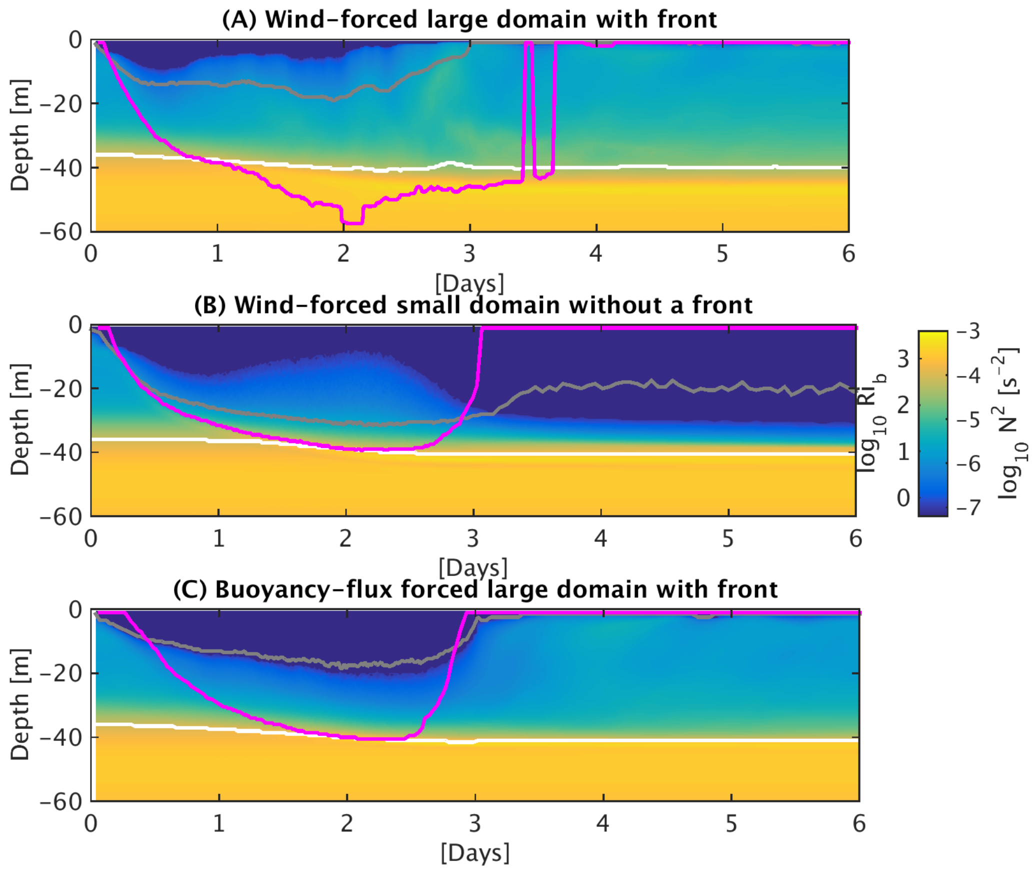

FIG. 2. Time series of horizontally-averaged stratification $\langle N^2\rangle_{x,y}$ and (equivalently) the balanced Richardson number $Ri_B = f^2\langle N^2\rangle_{x,y}/\langle M^2\rangle^2_{x,y}$ in three simulations: the wind-forced front (a), the wind-forced domain without a front (b), and the strong buoyancy flux-forced front (c). Panels also include time series of mixed layer depth H_{ML} (white), mixing layer depth H_{XL} (magenta), and the low-gradient-Richardson-number depth H_{Ri} (gray), above which the gradient Richardson number $Ri_g \leq 1/4$.

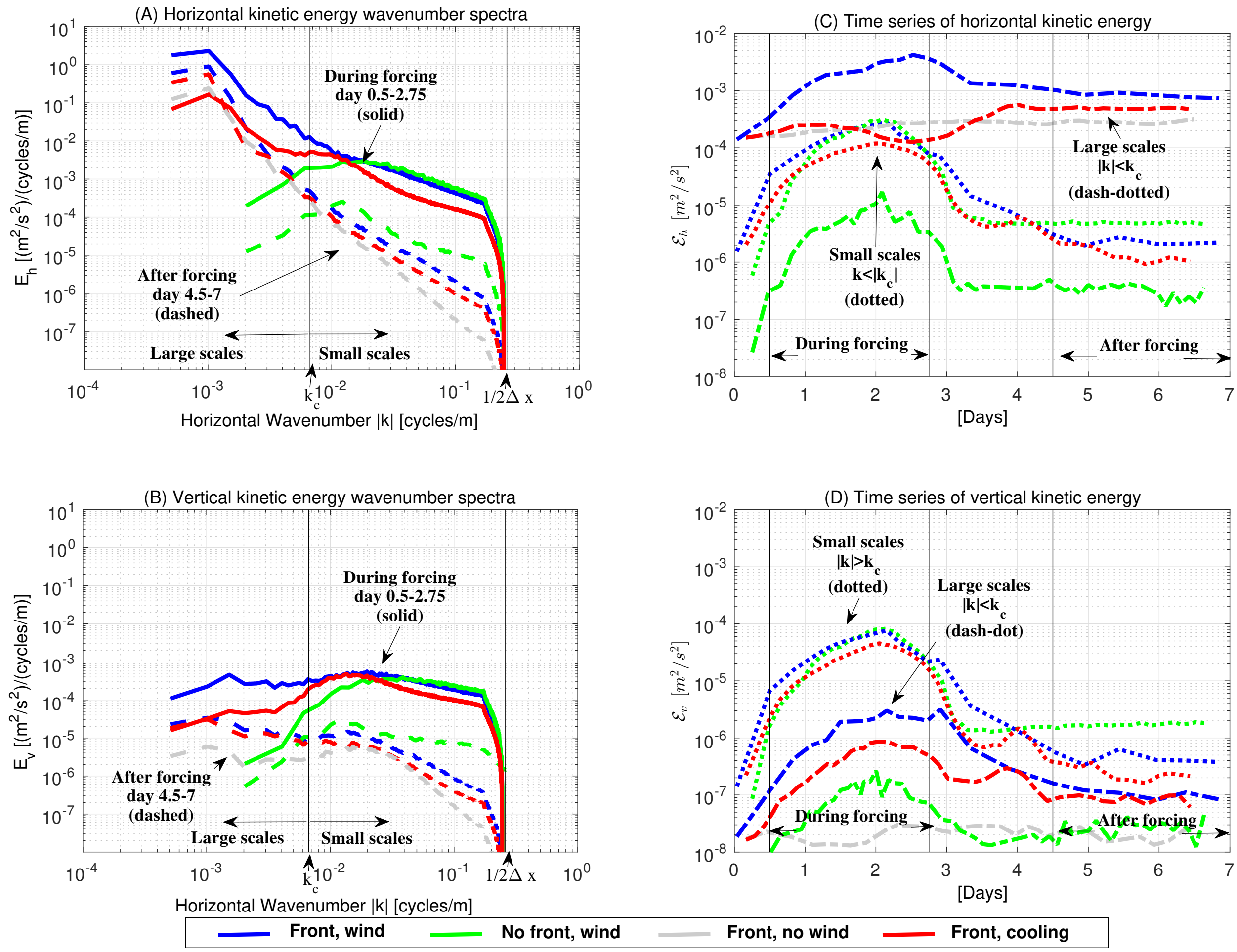

FIG. 5. Time-averaged power spectra of (a) horizontal velocity E_h and (b) vertical velocity E_v at $z = -30$ m as a function of radial horizontal wavenumber $|k_h|$. Time series of (c) horizontal kinetic energy $\mathcal{E}_h = \int E_h dk_h$ and (d) vertical kinetic energy $\mathcal{E}_v = \int E_v dk_h$ in the wind-forced front (blue), the strong buoyancy flux-forced front (red), the weak buoyancy flux-forced front (gray), and the wind-forced domain without a front (green). The wavenumber spectra in (a)-(b) are averaged during the storm ($0.5 < t < 2.75$ days, solid) and after the storm ($4.5 < t < 7$ days, dashed lines). The kinetic energy in (c) and (d) is integrated over small scales (dotted), that is, over wavenumbers $|k_h| > k_c$ where $k_c = 1/150$ cycles/m, and large scales (dash-dotted), that is, $|k_h| < k_c$. Several lines are omitted: solid gray lines are omitted from (a) and (b) and dotted gray lines are omitted from (c) and (d) because there is no storm event in that simulation.