SUPPLEMENTARY MATERIALS FOR

INTERACTION OF TYPHOON-DRIVEN NEAR-INERTIAL WAVES WITH AN ANTICYCLONE IN THE PHILIPPINE SEA

By Cauê Zirnberger Lazaneo, Leif Thomas, Zoltan B. Szuts, Jesse M. Cusack, Kai-Fu Chang, and R. Kipp Shearman

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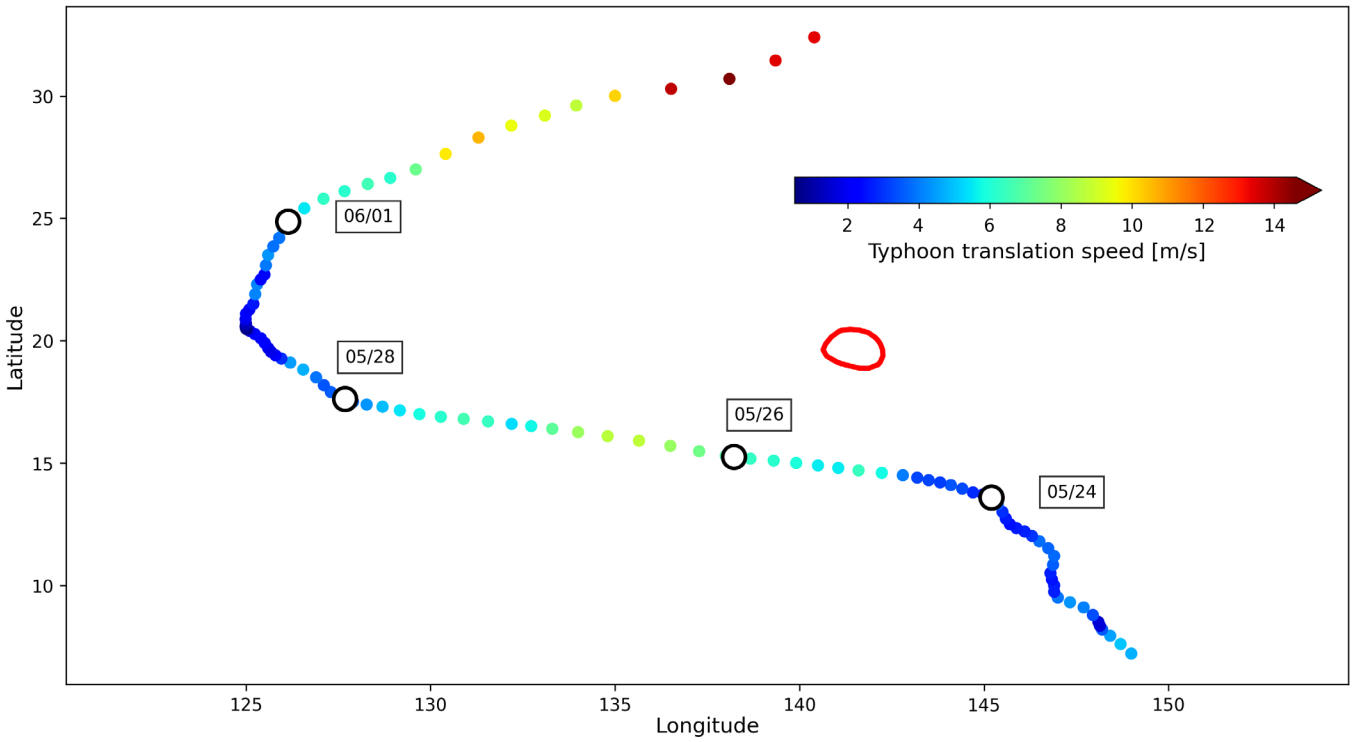

FIGURE S1. Full typhoon track since its formation region colored by its translation speed. Source data from International Best Track Archive for Climate Stewardship (IBTrACS) Project. Red contour depicts the target eddy's location.

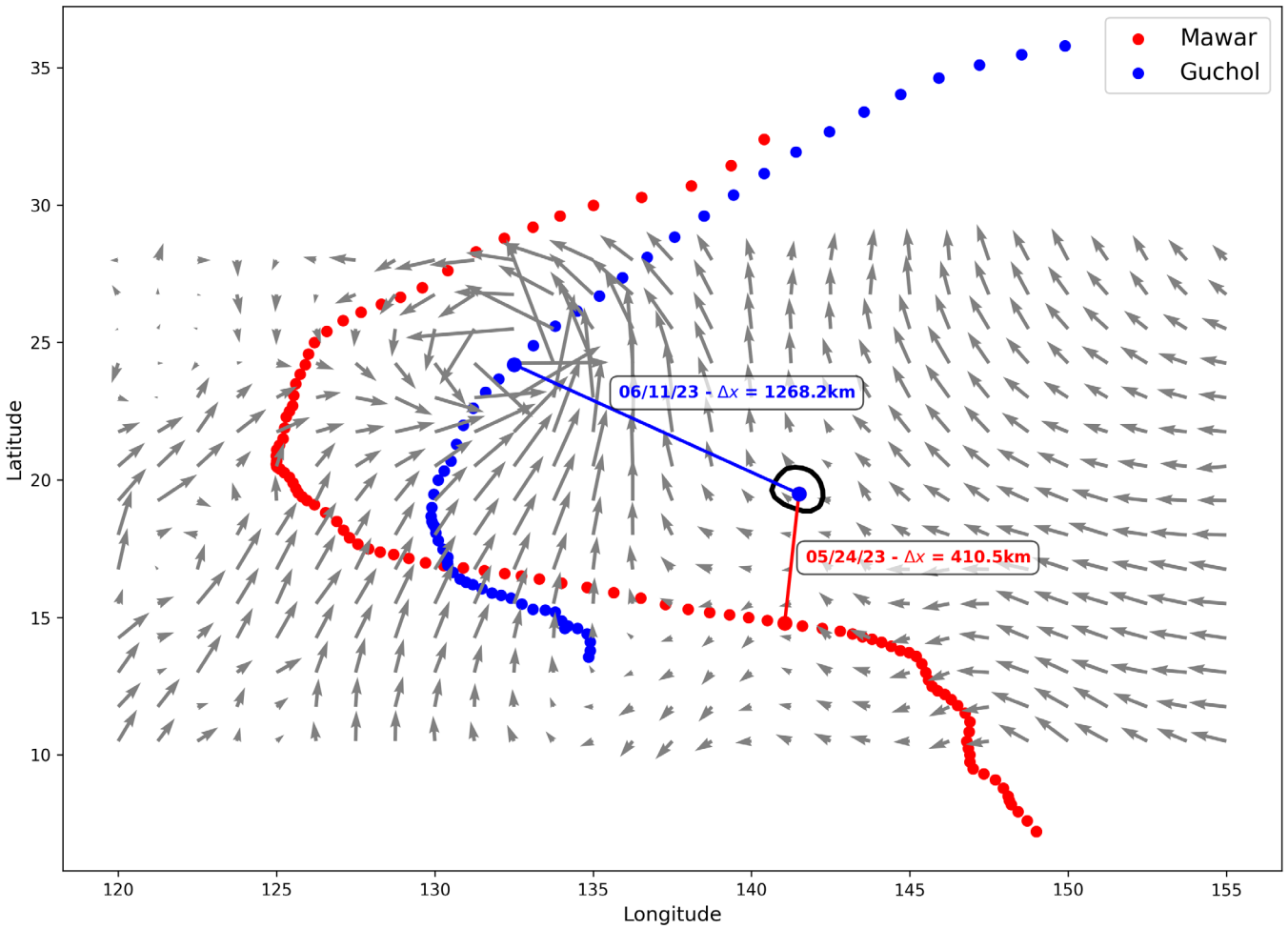

FIGURE S2. Snapshot of the wind field on June 11 (gray arrows), showing the tracks of Typhoon Guchol (blue dots) and Typhoon Mawar (red dots). The distance from Typhoon Guchol to the target eddy is indicated, along with the shorter distance from Typhoon Mawar to the target eddy on the specified date.

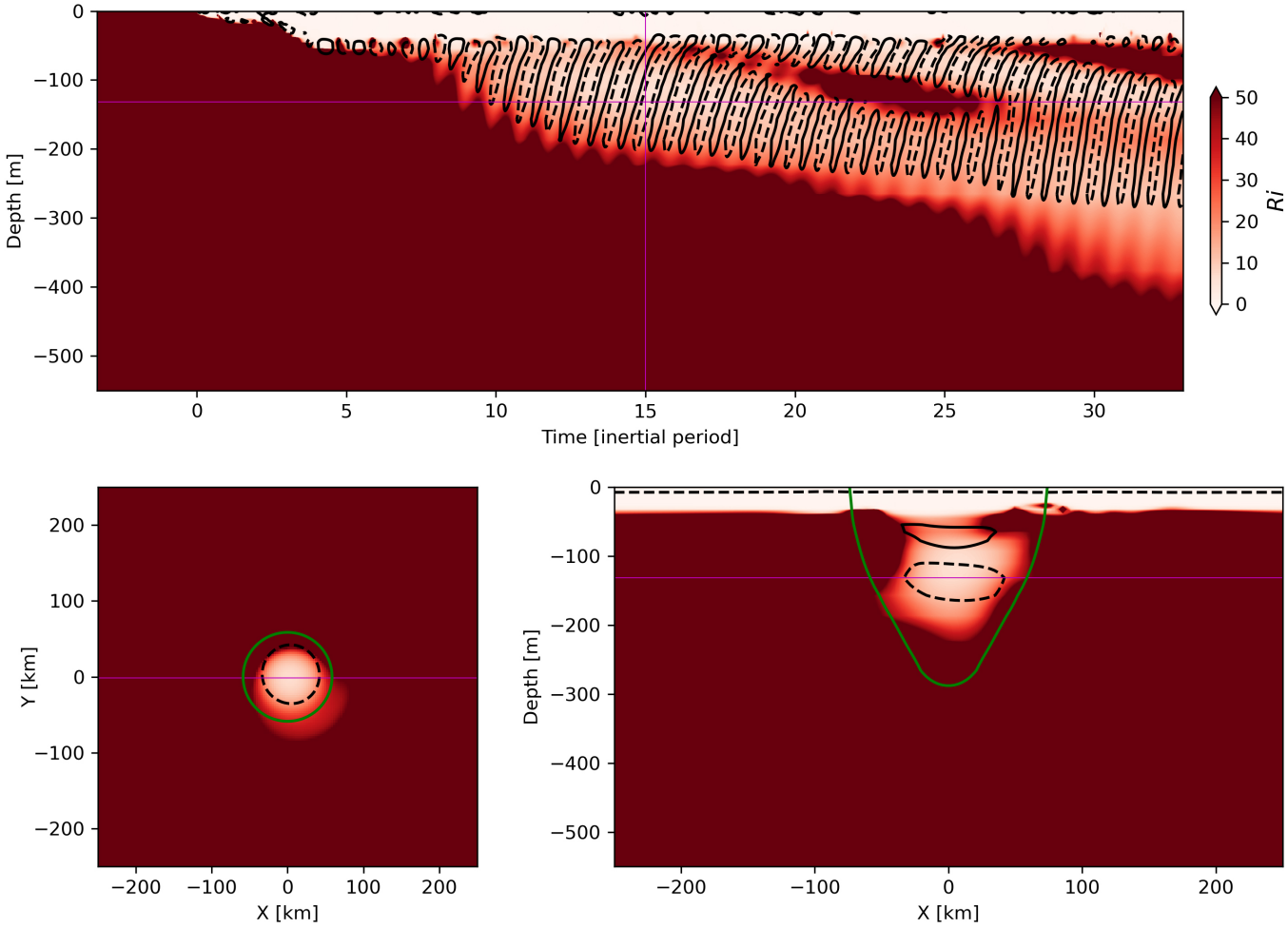

FIGURE S3. All panels depict Richardson number in different formats: Hovmöller diagrams, horizontal or vertical sections. Panel (a) shows a Hovmöller diagram of the simulated Richardson number (color) overlaid with contours of simulated vertical shear. The magenta line marks the depth and time for the snapshots in panels (b) and (c). Panel (c) displays a horizontal section at z = 131 m of the simulated Richardson number at t = 15, with black contours showing vertical shear, and the green contour indicating where $f_{eff} = 0.95f$. The magenta line denotes the location of the vertical section in panel (c). Panel (c) shows the Richardson number along a cross-section through the eddy center, as indicated by the magenta line in panel (b), with contours of vertical shear and the green line marking $f_{eff} = 0.95f$.

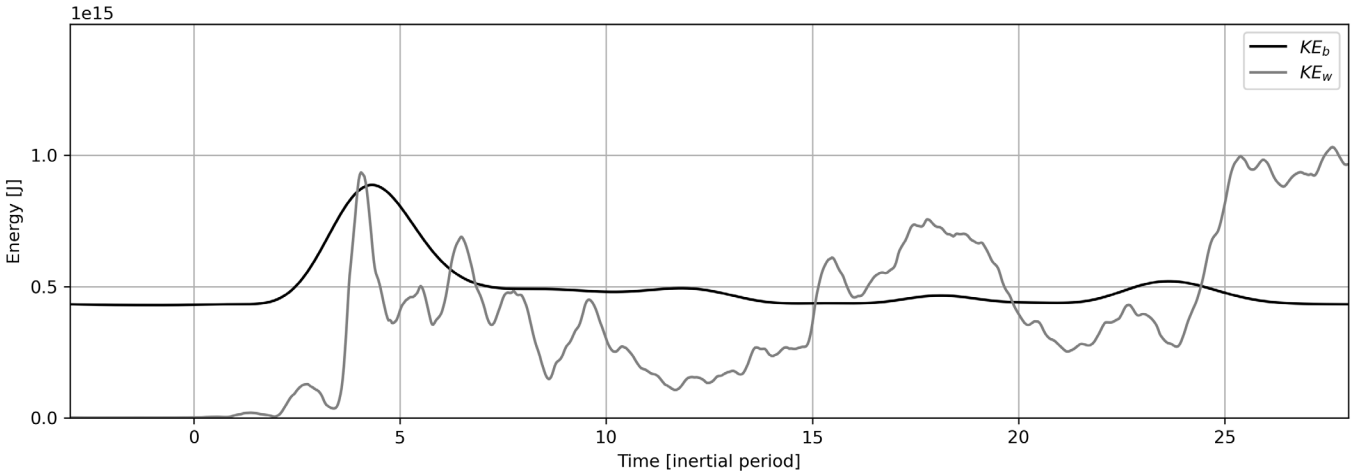

FIGURE S4. Time series of the domain-integrated balanced kinetic energy (KE_b, black) and near-inertial wave kinetic energy (KE_w, gray).

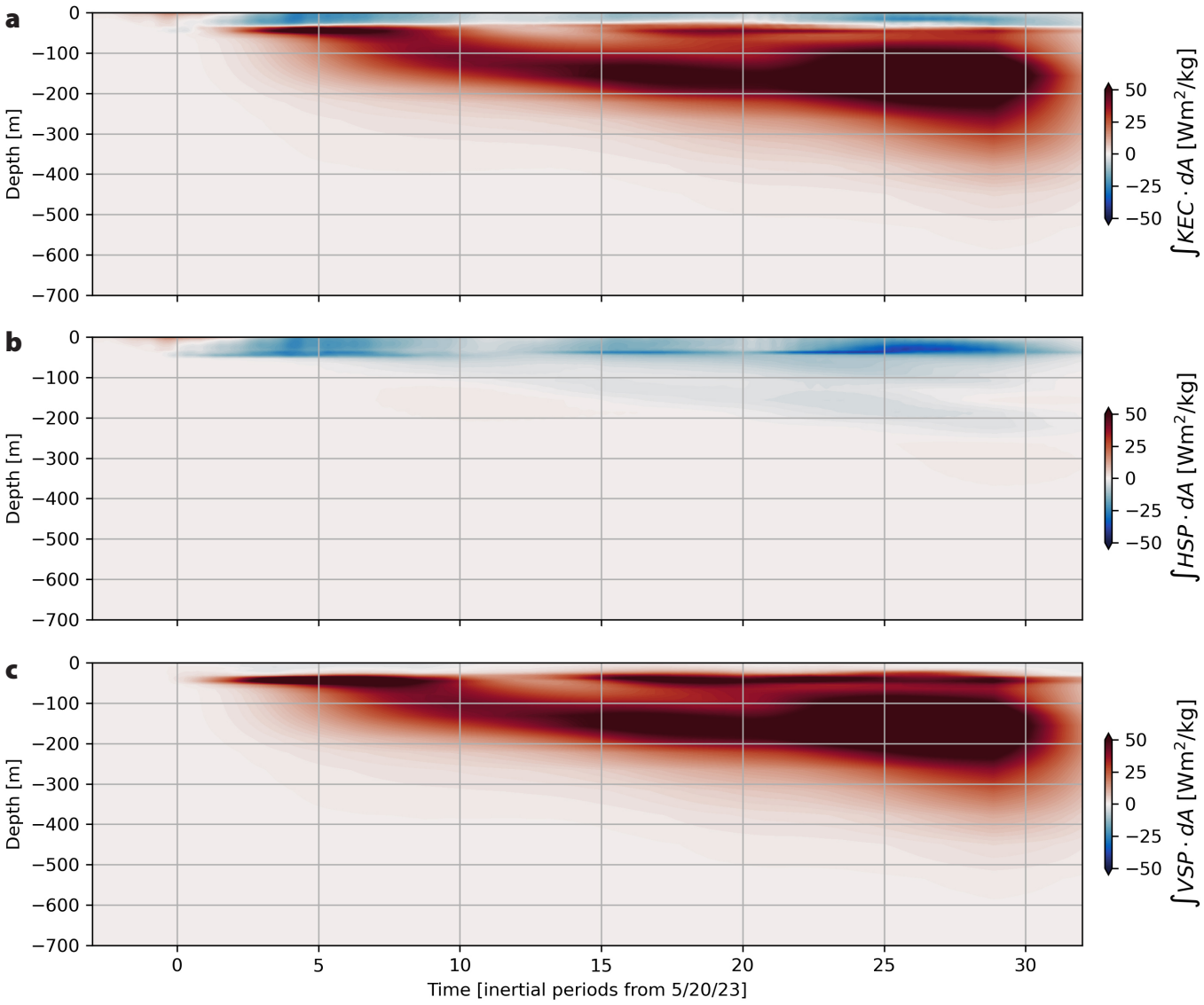

FIGURE S5. Lateral integration of (a) kinetic energy conversion (KEC = HSP + VSP), (b) HSP term, and (c) VSP term, illustrating the conversion toward balanced kinetic energy (blue shading) and near-inertial kinetic energy (red shading).