Supplement of "Escalating typhoon risks in Shanghai amid shifting tracks driven by urbanization and sea surface temperature warming"

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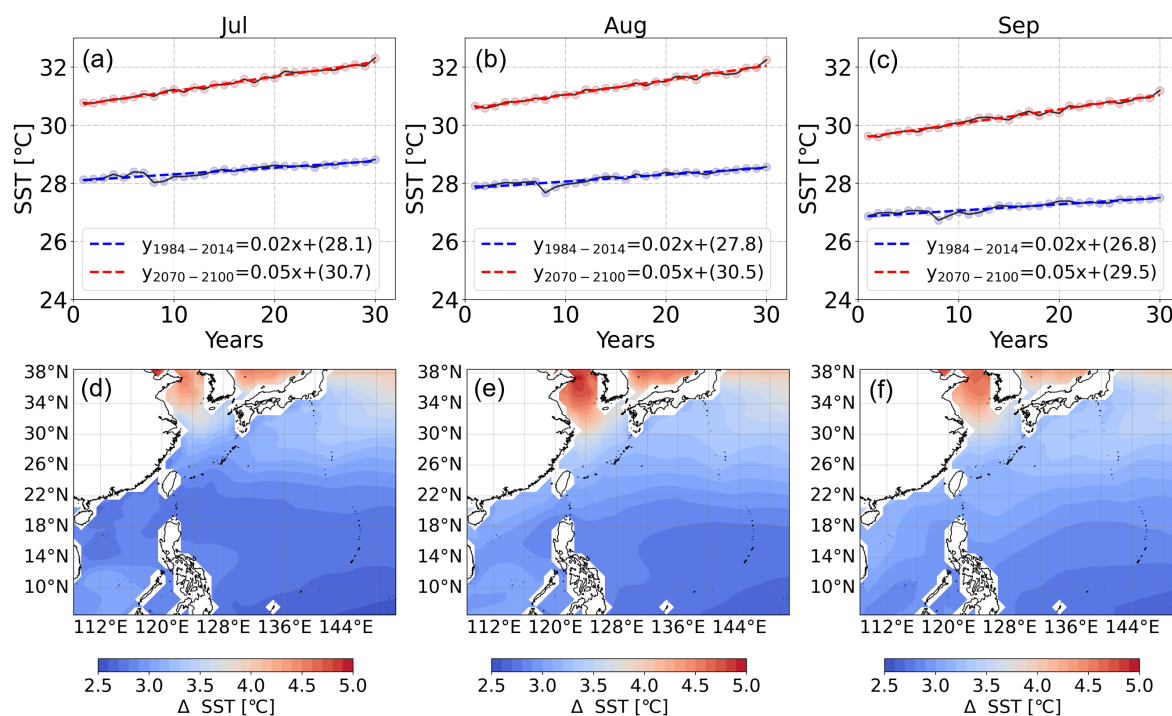
Figure S1. Comparing the average SST for the months of July (a)(d), August (b)(e), and September (c)(f) between the CMIP6 historical period (1984-2014) and the future period (2070-2100) under the SSP-8.5 high-emission. The first row represents the temporary trend of SST, while the second row shows the spatial difference of SST in domain DO1.
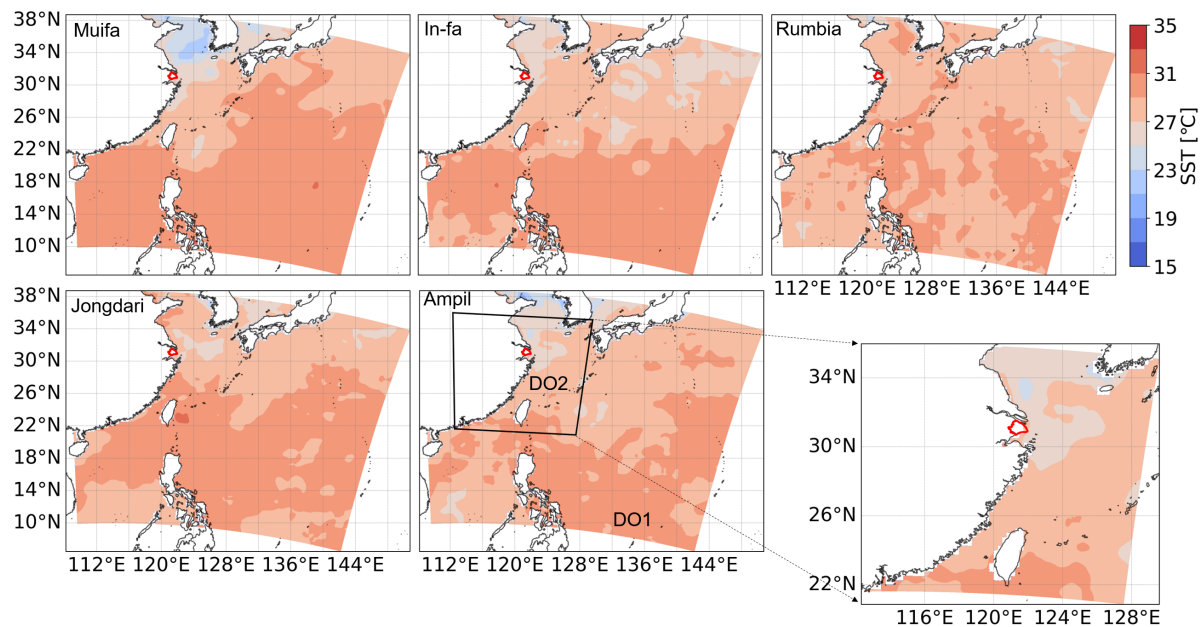
Figure S2. Initial SST conditions of five simulated typhoon events in DO1 and DO2 of WRF simulations based on GHRSST input. Shanghai area is marked in red.
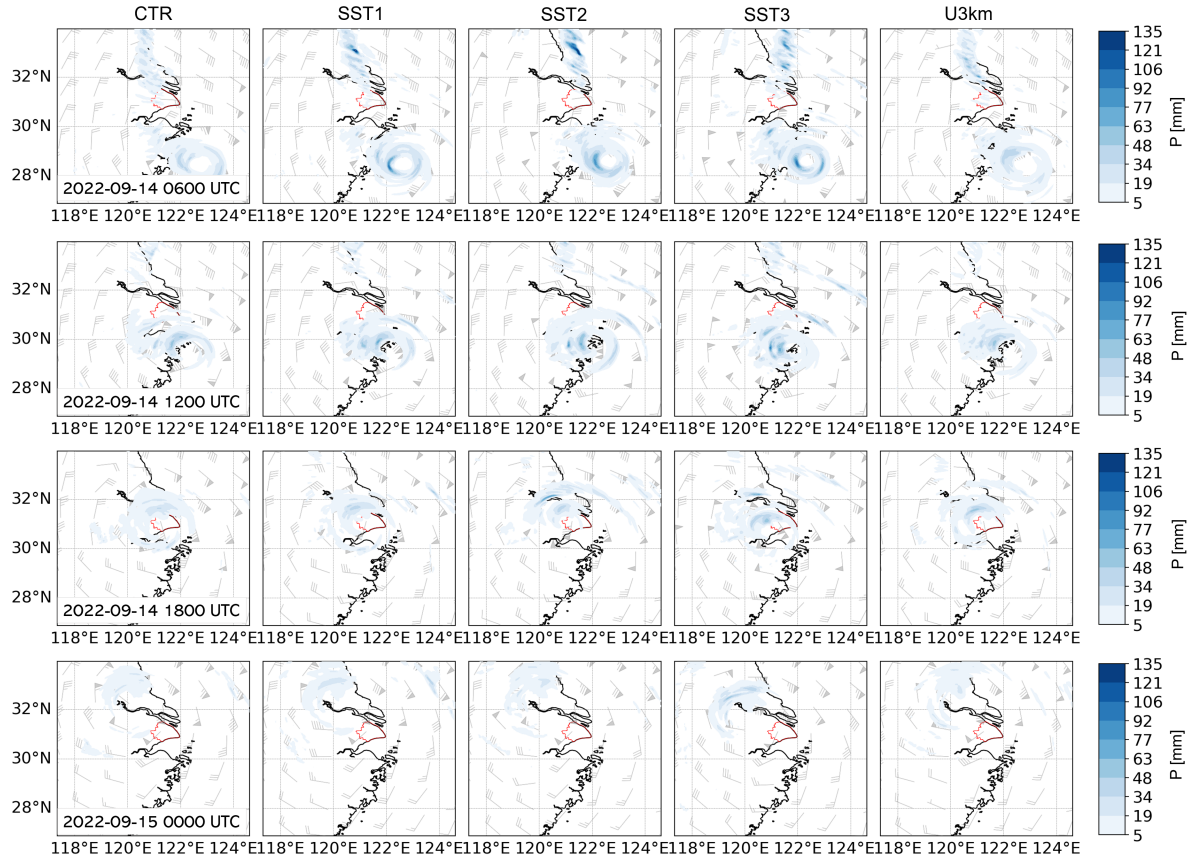
Figure S3. An example (Typhoon Muifa) of the WRF-simulated hourly rainfall (P [mm]) and 850 hPa height wind velocity (W^{850} [m s^{-1}]) at several time steps under different scenarios.Shanghai area is marked in red.
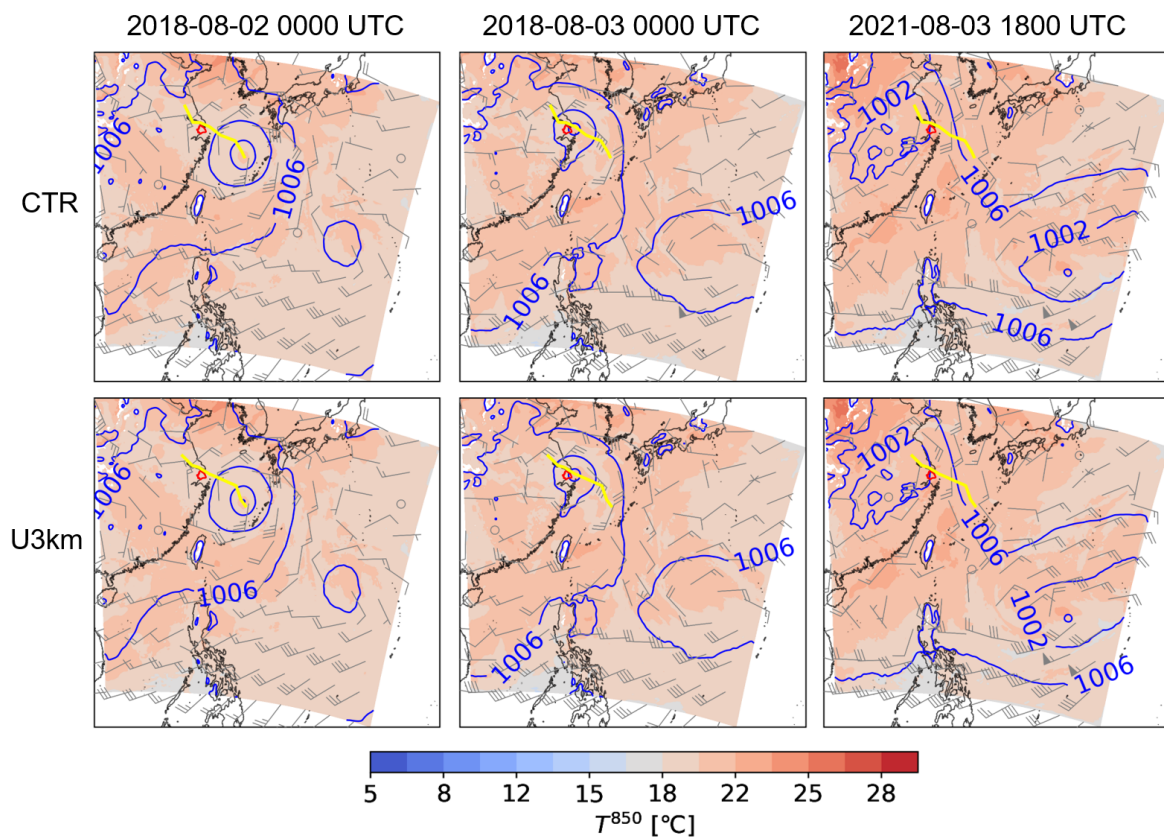
Figure S4. Same as Figure 9 in the manuscript but for typhoon Jongdari.
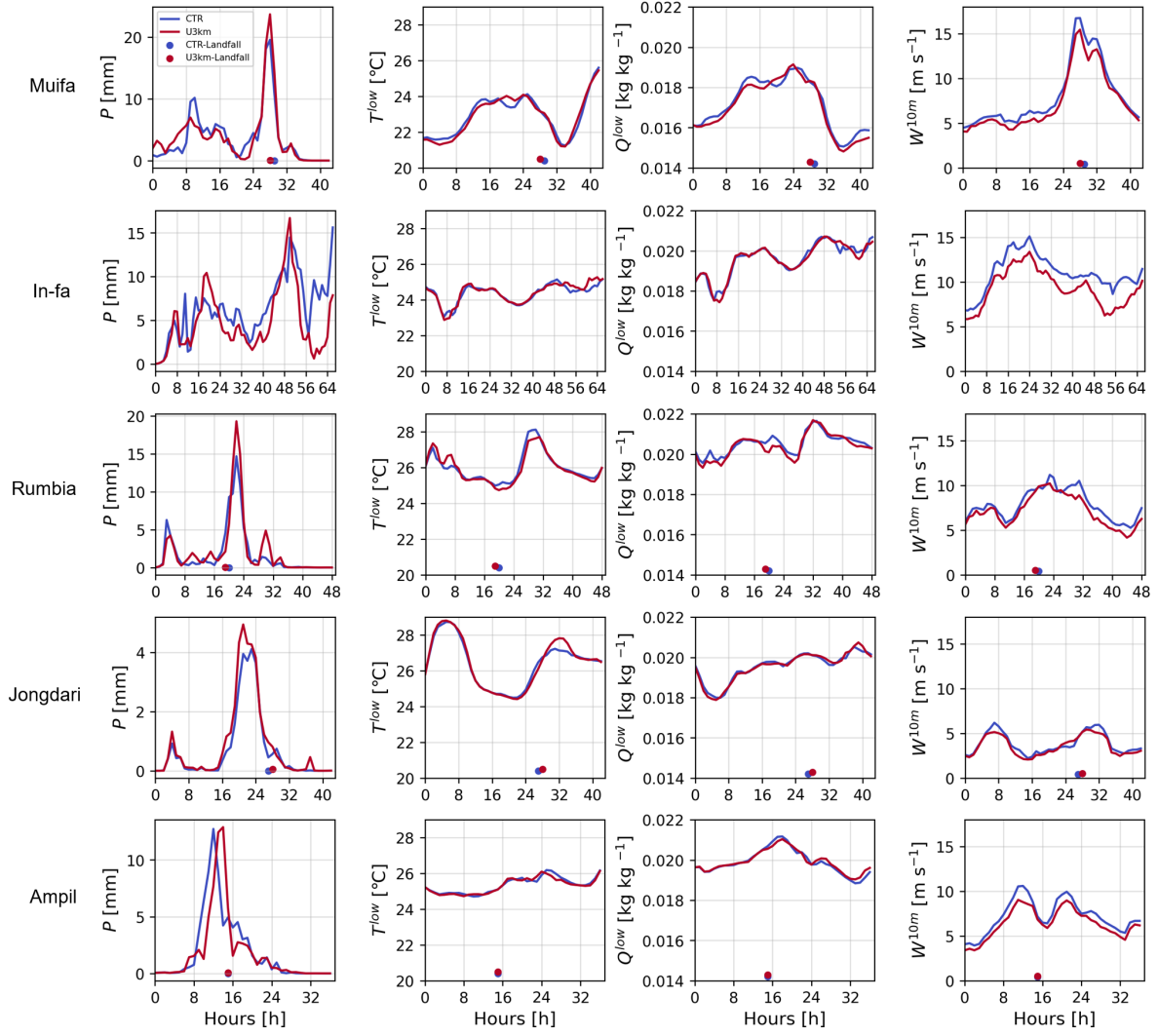
Figure S5. Time series of hourly rainfall (P [mm]), low-vertical level (the first 6 layers) temperature (T^{low} [$°C$]), water vapor mixing ratio (Q^{low} [kg kg^{-1}]), and 10-m wind speed (W^{10m} [m s^{-1}]) within the Shanghai domain (marked by red in Figure 1) under the CTR (in blue), and U3km (in red) simulations. The dots in the figure indicate the time of TC landfall in Shanghai.