Supplementary of
Local thermal gradient and large-scale circulation impacts on turbine-height wind speed forecasting over the Columbia Basin

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Figures S1 to S4

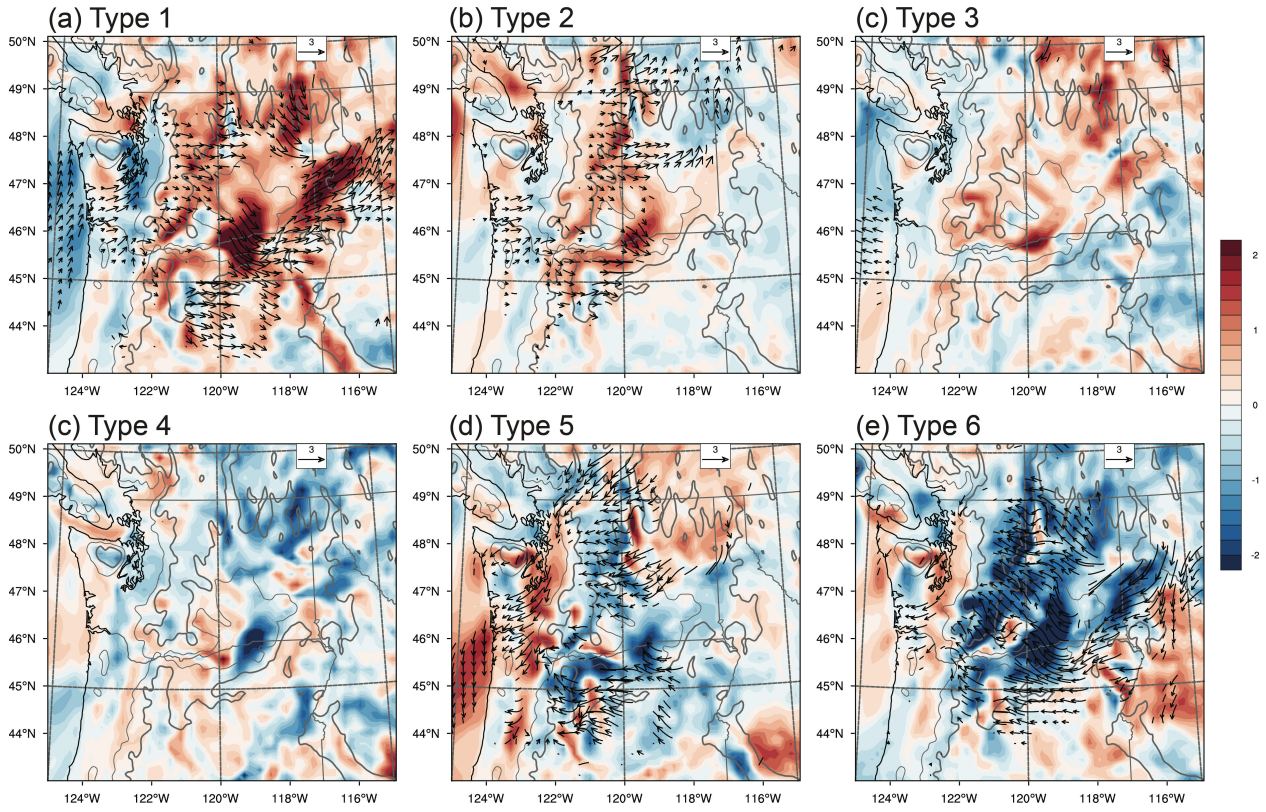

Figure S1 Turbine-height wind speed difference from the ensemble mean of each SOM type for the sea-breeze case at 29 h, according to six SOM types clustering. Wind vectors are shown when either the zonal or meridional wind anomalies are significant at the 0.05 level. Colors indicate the wind speed anomaly. Gray lines indicate terrain elevation of 500 (thin) and 1000 m (thick). Type 3 has similar wind speed anomaly to type 2, while the wind vector is not significant in type 3. There is almost no significant difference in wind vector in type 4 from the ensemble mean.

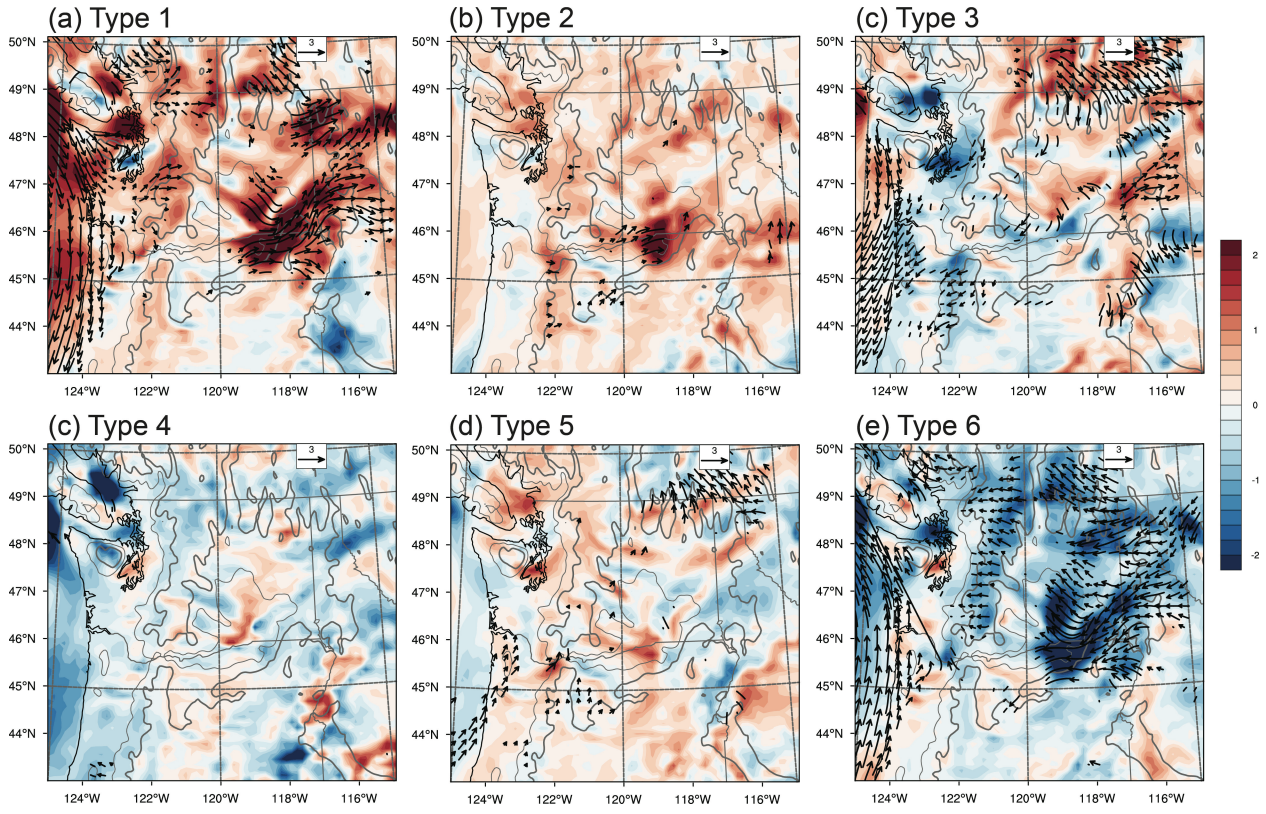

Figure S2 The same as Figure S1, but for the cold-front case. Type 2 shows smaller magnitude of wind speed anomaly and less significant wind vectors compared to type 1. Type 4 just resemble the anomalous wind speed in type 3 with no significant wind vector.

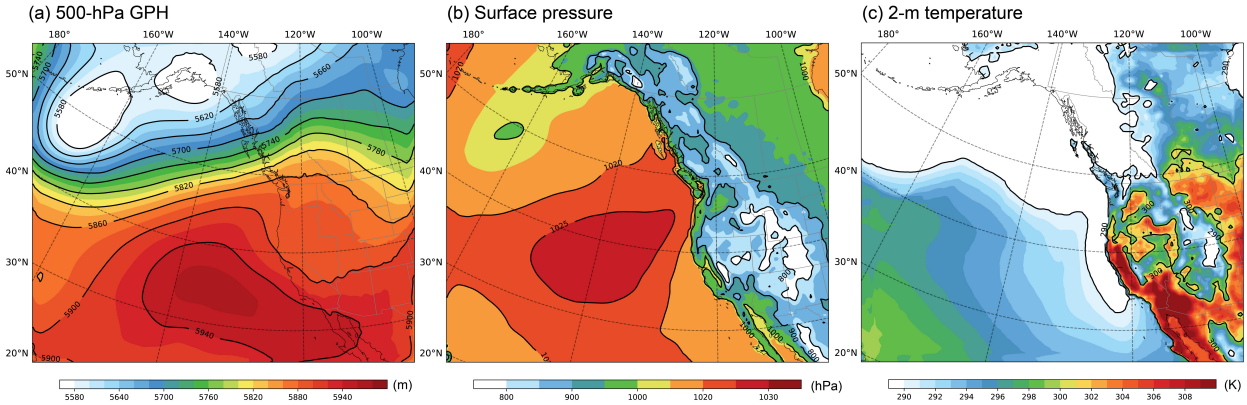

Figure S3 Ensemble mean (a) 500-hPa GPH, (b) Surface pressure, and (c) 2-m temperature for the Sea-breeze case.

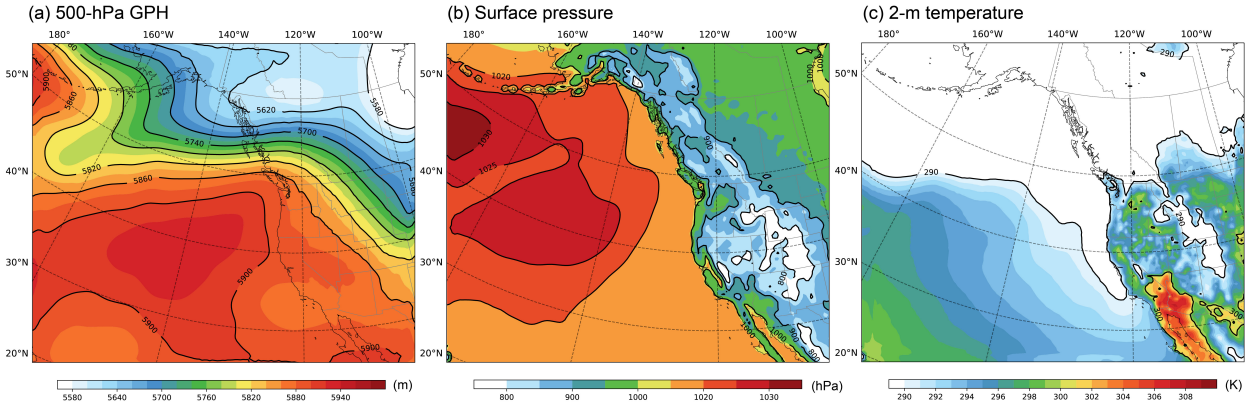

Figure S4 The same as Figure S3, but for the cold-front case.