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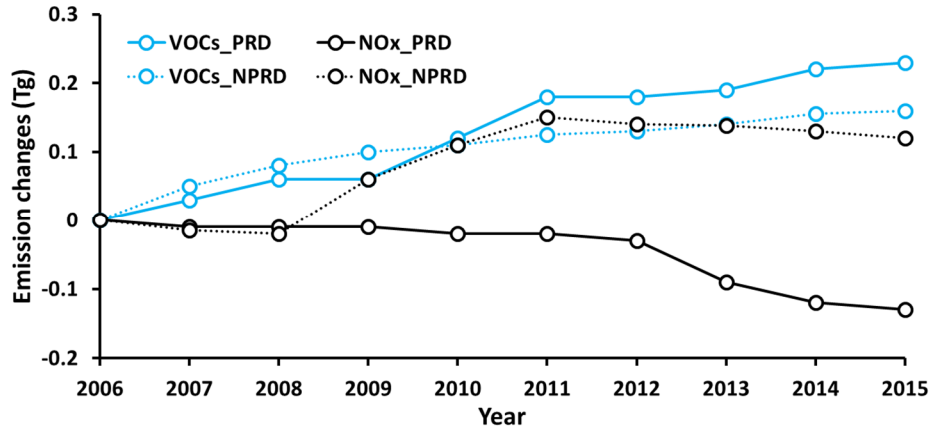
*Supplement of*

## **Quantitative impacts of meteorology and precursor emission changes on the long-term trend of ambient ozone over the Pearl River Delta, China, and implications for ozone control strategy**

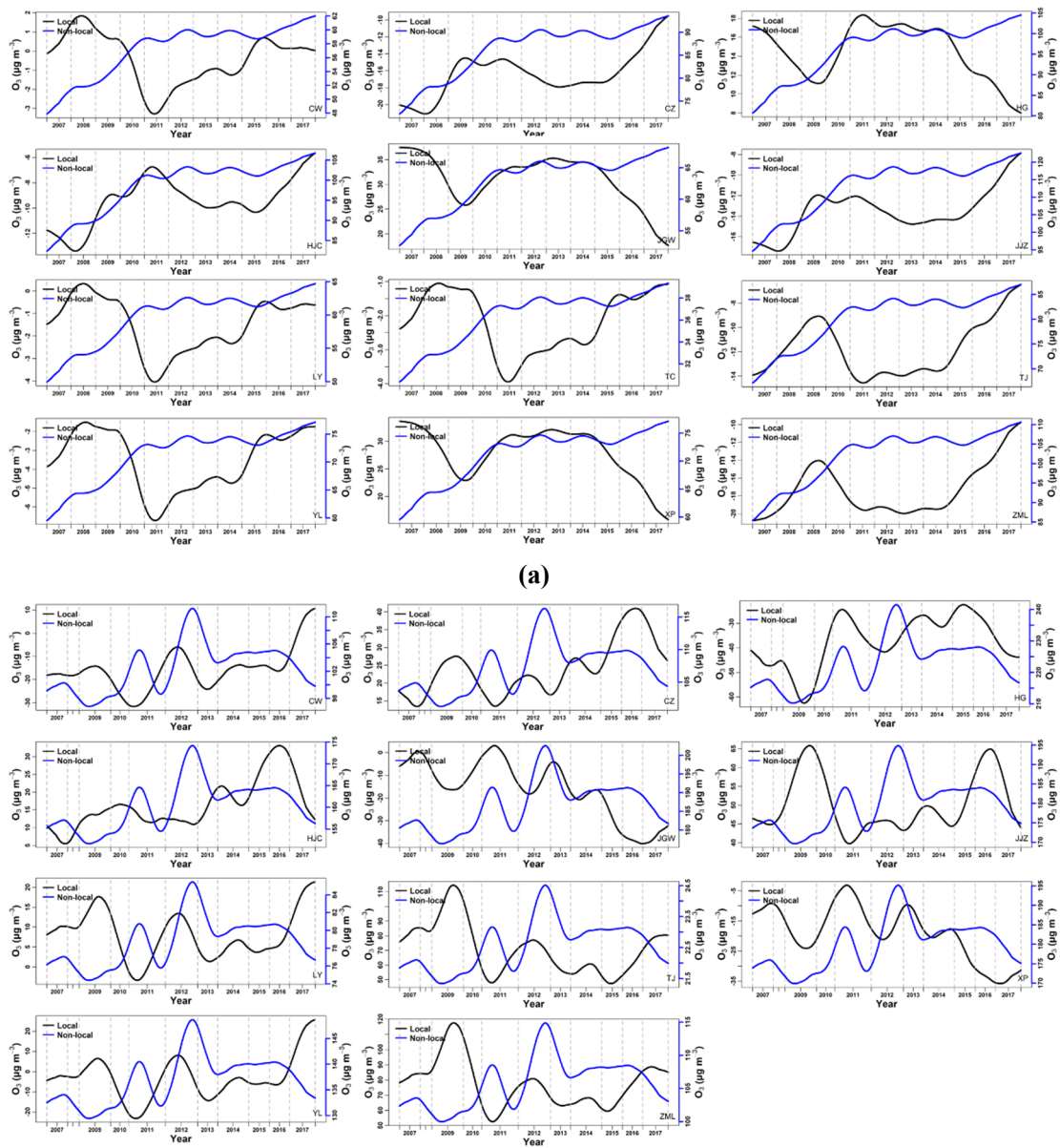
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**Fig S1. Normalized value of NOx and VOCs emissions over the Pearl River Delta and non-Pearl River Delta area in Guangdong in 2006-2015 against the emissions in 2006 (manuscript under preparation)**



(b)

Fig S2. Long-term trend of ozone contributed by local (black) and non-local (blue) emission sources from 2007 to 2017 during general condition (a) and ozone episodes (b) at different sites of the Pearl River Delta.

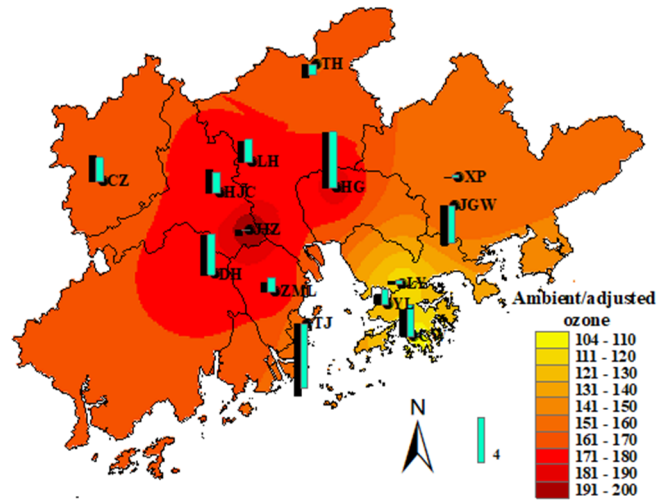


Fig S3. Spatial distribution of averaged ozone concentrations during ozone episodes in the Pearl River Delta and the annual ozone changes ( $\mu\text{g m}^{-3} \text{ year}^{-1}$ ) before and after meteorological adjustment over the fourteen monitoring stations during 2007-2017. The bar length in the legend corresponds to an annual increase of  $4 \mu\text{g m}^{-3}$ . The legend of color contours refers to the isopleths of averaged annual ozone concentration ( $\mu\text{g m}^{-3}$ ) before and after meteorological adjustment.

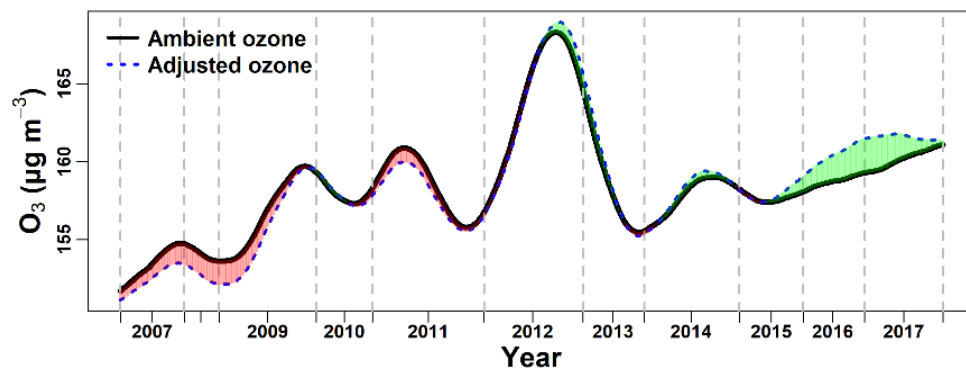
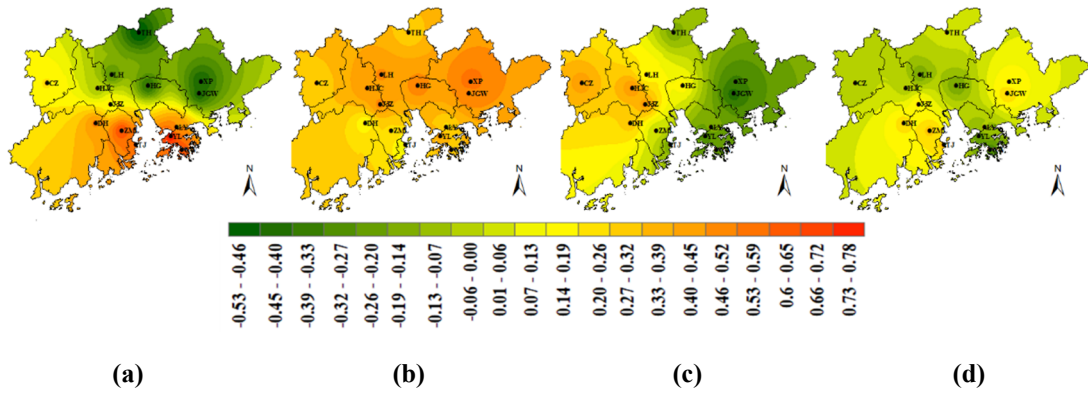
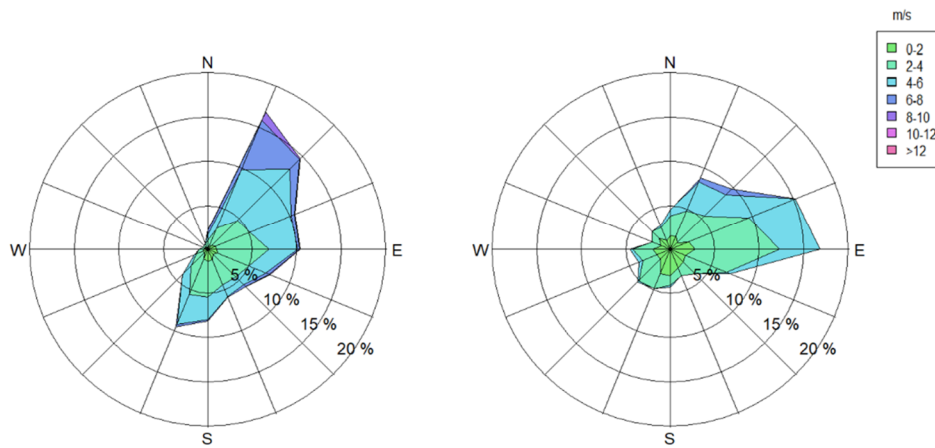


Fig S4. Long-term trends of ambient ozone, meteorologically adjusted ozone, and the meteorological impact in the Pearl River Delta during ozone episodes in 2007-2017.



**Fig S5. Spatial distribution of principal component loadings (PC1-4: a-d). With positive loadings at all stations, PC2 is assigned to represent impact from non-local emissions. The other three PCs reflect impacts from different local emissions.**



**Fig S6. Wind rose under general conditions (left) and during ozone episodes (right) from 2007 and 2017 over the Pearl River Delta.**