

*Supplement of*

**The impacts of dust aerosol and convective available potential energy on precipitation vertical structure in eastern China as seen from multiple source observations**

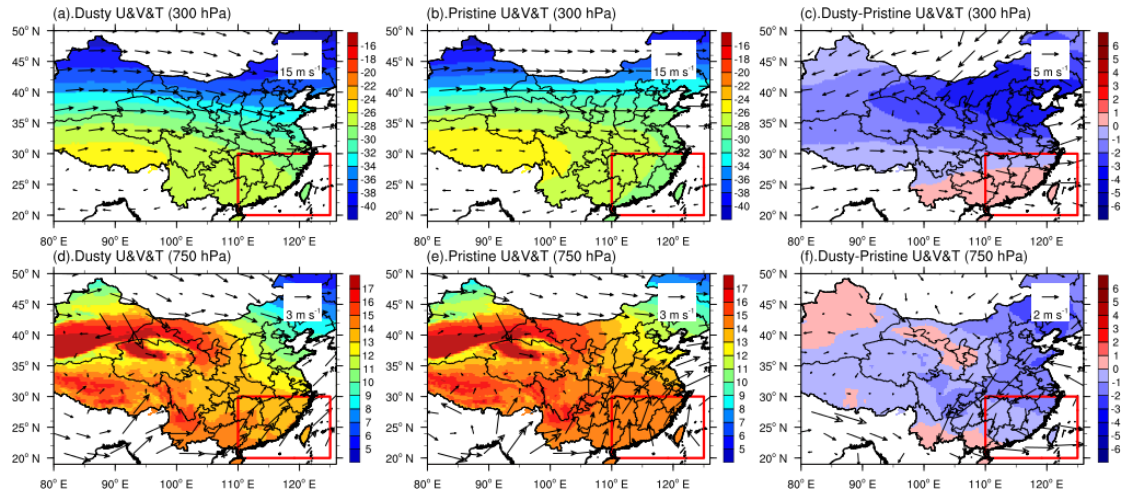
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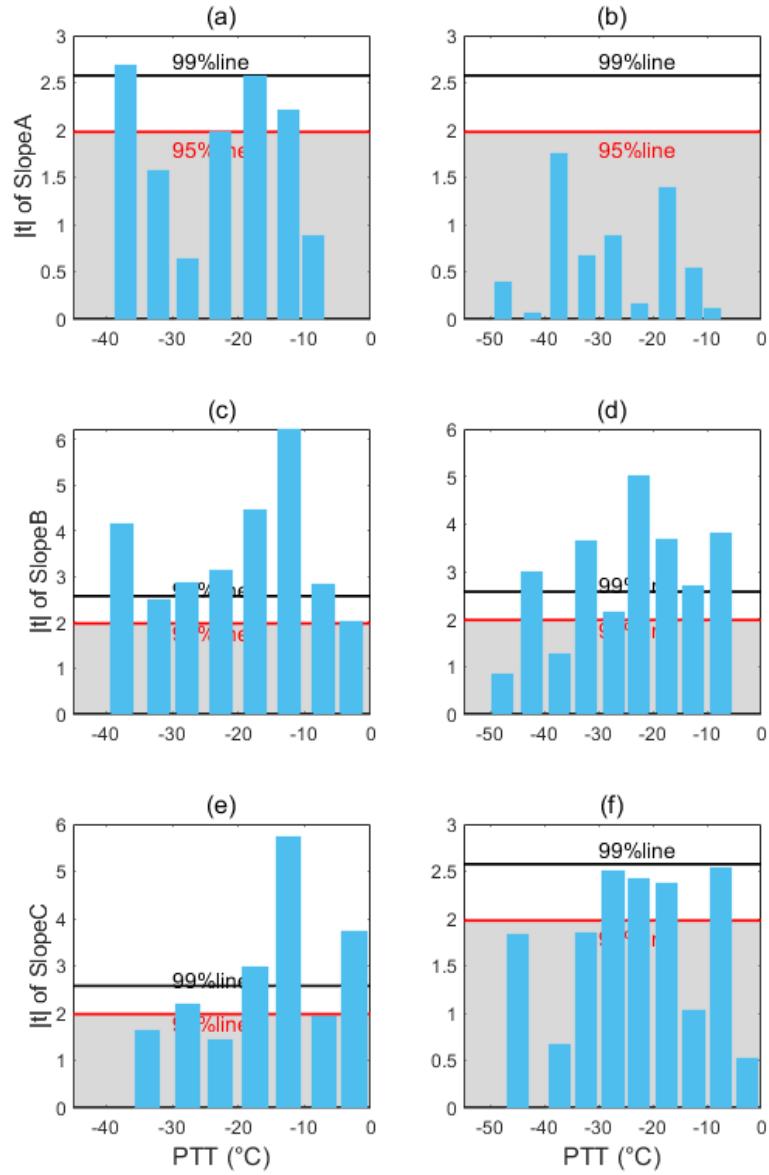
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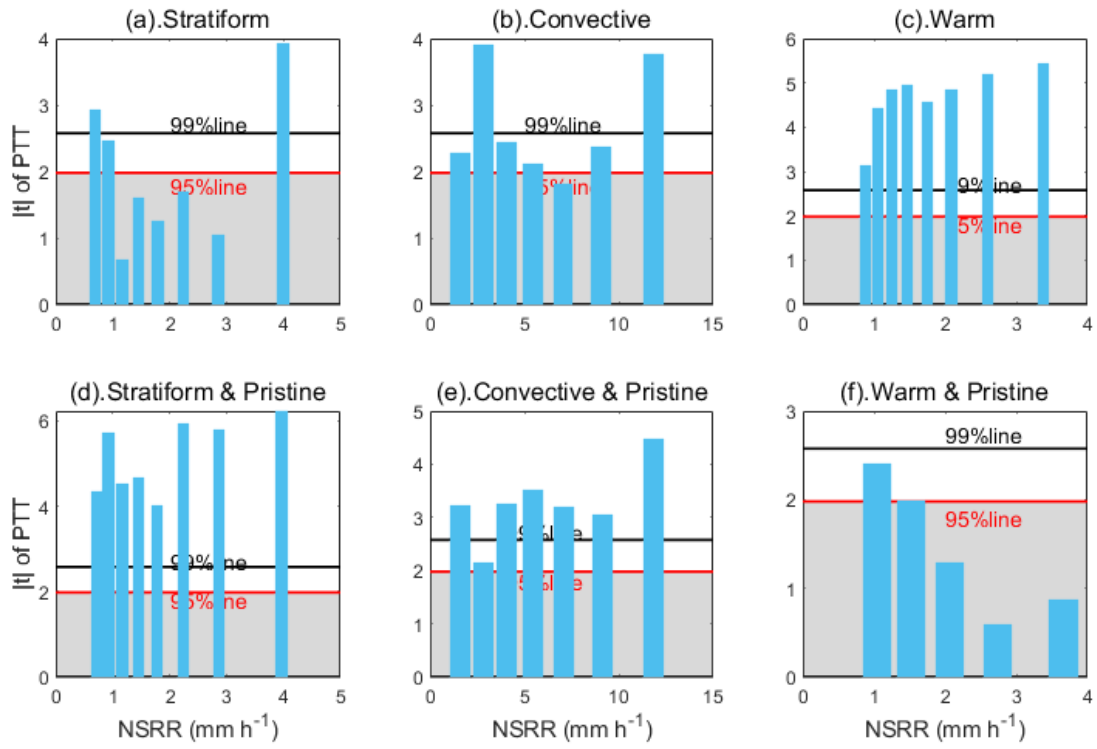
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15 **Figure S1: The mean fields of wind, temperature at 300 hPa (a,b) and 750 hPa (d,e) for pristine and dusty days. Differences in wind field, temperature at 300 hPa (c) and 750 hPa (f) between dusty and pristine days.**



**Figure S2: For a given PTT, t test significance for the differences between SlopeA (a, b), SlopeB (c, d), and SlopeC (e, f) of stratiform (the first column) and convective (the second column) precipitation for pristine and dusty conditions (red (black) line indicates the 95 % (99 %) confidence level at 100 degrees of freedom).**



25 **Figure S3.** For a given NSRR, t test significance for differences in PTT between stratiform (a, d), convective (b, e) and warm (c, f) precipitation in pristine and dusty conditions (the first row) and between strong CAPE and weak CAPE in pristine conditions (the second row), red (black) line indicates the 95 % (99 %) confidence level at 100 degrees of freedom.