

# Tracking Air Volumes for Assessing the Effect of Urban Aerosols on Convective Precipitation: A Multi-Member Modeling Study

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## Reviewer Comments

The manuscript reads well, with a clear description of the methodology and box analysis of convective events. The authors did a commendable job redoing the significance test using the bootstrap method. In the document author's response to reviewers, the figure showing the difference between the t-test and the bootstrap significance was helpful to know that the results didn't change. Nice work!

I have only minor comments, and I recommend publishing the manuscript after the following edits without requiring my review again.

### Minor edits

1. Line#174 Please rewrite (D0, D1, D2) as "with domains: D0, D1, and D2."
2. Line#212 Please rewrite as "The spin-up lengths **for domain D2** are 24 h, 21 h, 18 h, 15 h, **and** 12 h"
3. Line#259: Is it "horizontally from all grid points"?
4. Line#268: rewrite as "sufficiently represent"
5. Line#270 replace "To partially compensate for the limited ensemble size, a bootstrap significance test was applied" with "To partially compensate for the limited ensemble size, the grid cells within the analysis box are considered to represent the variability in cloud processes. So, the bootstrapping significance test is applied as follows."
6. Line#296-298 – Please include references to support this argument
7. Line#335 – delete "Upper-level"
8. Line#359 – replace "convective processes" with "precipitation processes"
9. Line# 500 – delete "single" from "single convective clouds"