

## ***Interactive comment on “Simulating Lightning NO<sub>x</sub> Production in CMAQv5.2 Using mNLDN, hNLDN, and pNLDN Schemes: Performance Evaluation” by Daiwen Kang et al.***

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Thank you for pointing out the loose points for the code and data accessibility. We have now provided clarity in the manuscript with more accurate links and descriptions.

1. The CMAQ and WRF code references point to project websites. This is insufficiently persistent and precise for GMD purposes. Please also cite a persistent public archive of the exact version of the source used.

We have now updated the links for both WRF and CMAQ to point to their specific versions.

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Discussion paper



WRF: <http://www2.mmm.ucar.edu/wrf/users/wrfv3.8/updates-3.8.html>

CMAQ: <https://github.com/USEPA/CMAQ/tree/5.2>

2. Data processing and analysis scripts are available "on request". This does not meet GMD requirements. Please provide a citation of a persistent public archive of the scripts (e.g. Zenodo).

We have now updated the dataset with all the scripts used to create the tables and plots in the manuscript as the dataset version 2.0: <https://zenodo.org/record/3360744>

3. The lightning dataset is proprietary, which is acceptable. However please identify exactly the data set and version used so that a reader who wished to reproduce the work would know exactly what they needed to purchase and use.

Unfortunately, we don't have additional information about the data set and its version. To obtain this dataset, one needs to contact Vaisala Inc. directly, and they would prepare the data with the region and time period from their database and that data is the original lightning flash data collected and managed by Vaisala Inc. For clarity, we added the sentence "The lightning data obtained from Vaisala Inc. is the cloud-to-ground lightning flashes over the contiguous United States".

4. The data citation to Zenodo is excellent. Please ensure that the additional data which is only "on request" is not actually required to reproduce the results.

In the data citation to Zenodo, we have provided the immediate data tables to produce the tables and plots without the "on request" data. However, the scripts provided could directly use the immediate data tables or start from the original "on request" data to understand how the immediate data tables are generated.

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