

## ***Interactive comment on “Anvil microphysical signatures associated with lightning-produced NO<sub>x</sub>” by J. L. Stith et al.***

### **Anonymous Referee #1**

Received and published: 11 December 2015

This manuscript is very well written and clearly presented. The paper presents very interesting results concerning the linkage of lightning NO<sub>x</sub> production with production of frozen droplet aggregates (FDAs).

My only question concerns the processes by which NO<sub>x</sub> and the FDAs are produced and how they are represented in the paper. Does the FDAs production only require presence of a strong electric field, or do lightning discharges need to occur? NO<sub>x</sub> production definitely requires the lightning flashes to occur. The VHF source densities may be adequate to show the location of the strong electric field, but the actual NO<sub>x</sub> production would likely be better represented by contour maps of the flash length derived from the LMA data. Providing the flash length information would be useful in comparisons of the magnitude of NO<sub>x</sub> from one storm to another and from the two cells

in the 25-26 May case.

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Interactive comment on Atmos. Chem. Phys. Discuss., 15, 31705, 2015.

**ACPD**

15, C10353–C10354,  
2015

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