Desired Future Application

GLM Flashes

→

Ground Flash Fraction Retrieval Algorithm
(see Koshak talk tomorrow)

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GLM Ground Flashes

GLM Cloud Flashes

←

Vital link

MSFC LNOM (lightning NOx)

↓

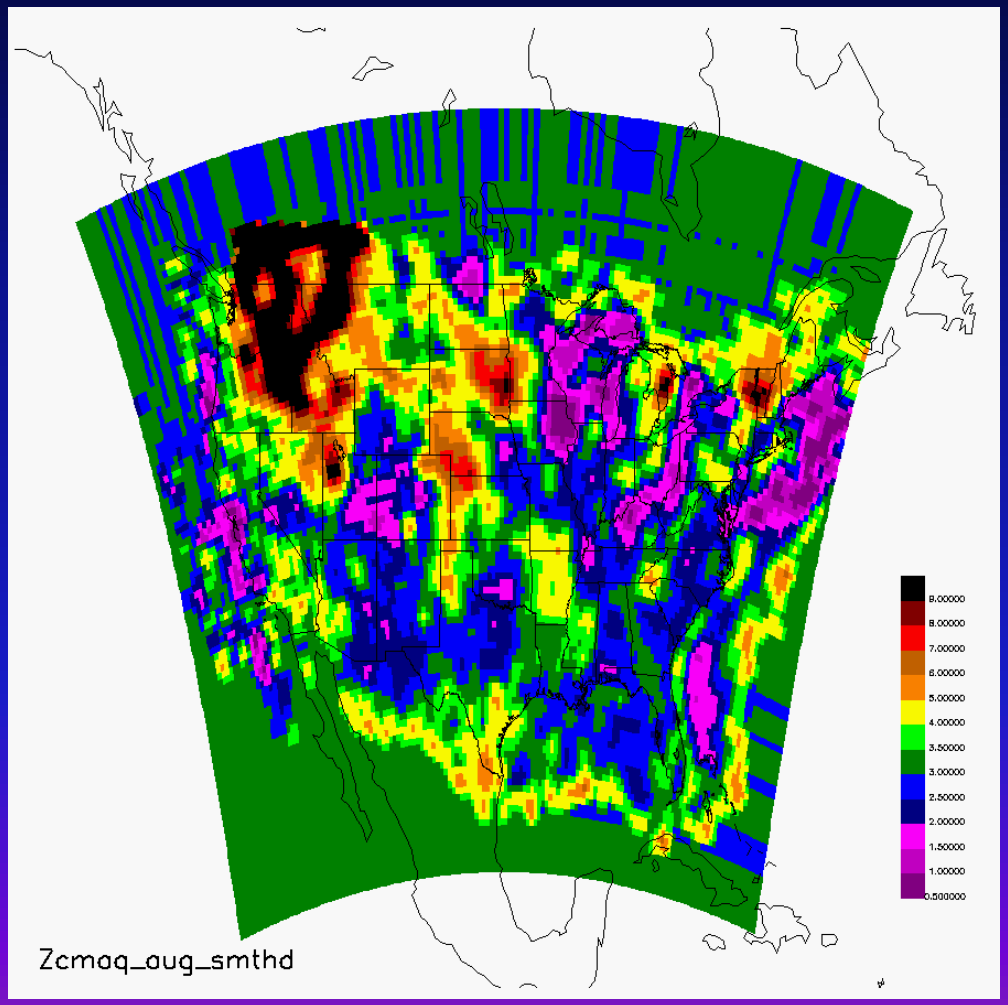
Air Quality Models (e.g. CMAQ)
Global Chemistry/Climate Models
(e.g. GISS Model E, Geos Chem)

CMAQ Domain

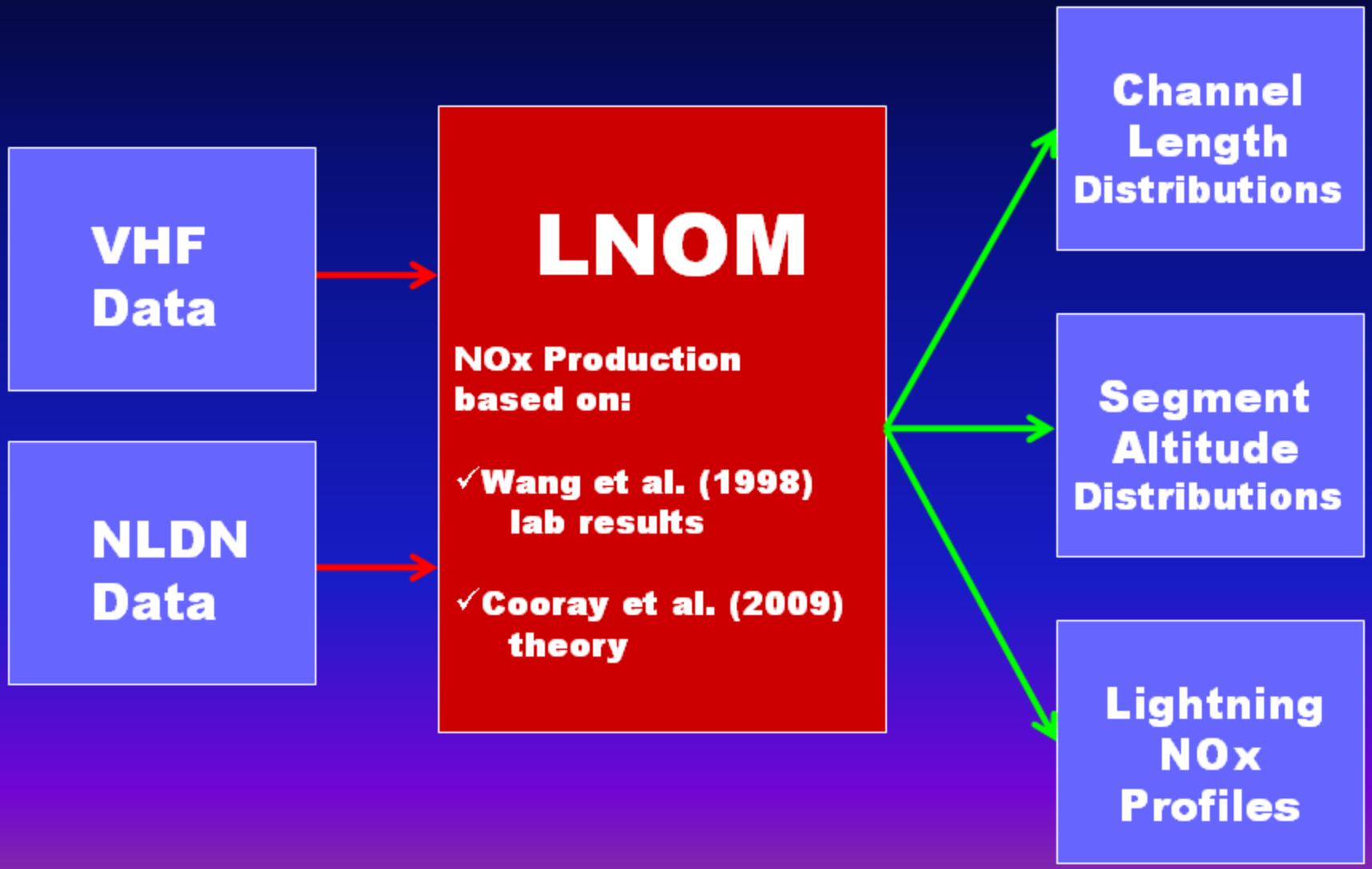
✓**GLM will provide continuous total lightning across much of CMAQ domain (GOES-E park).**

✓**Colors are Z ratio for Aug 2006**

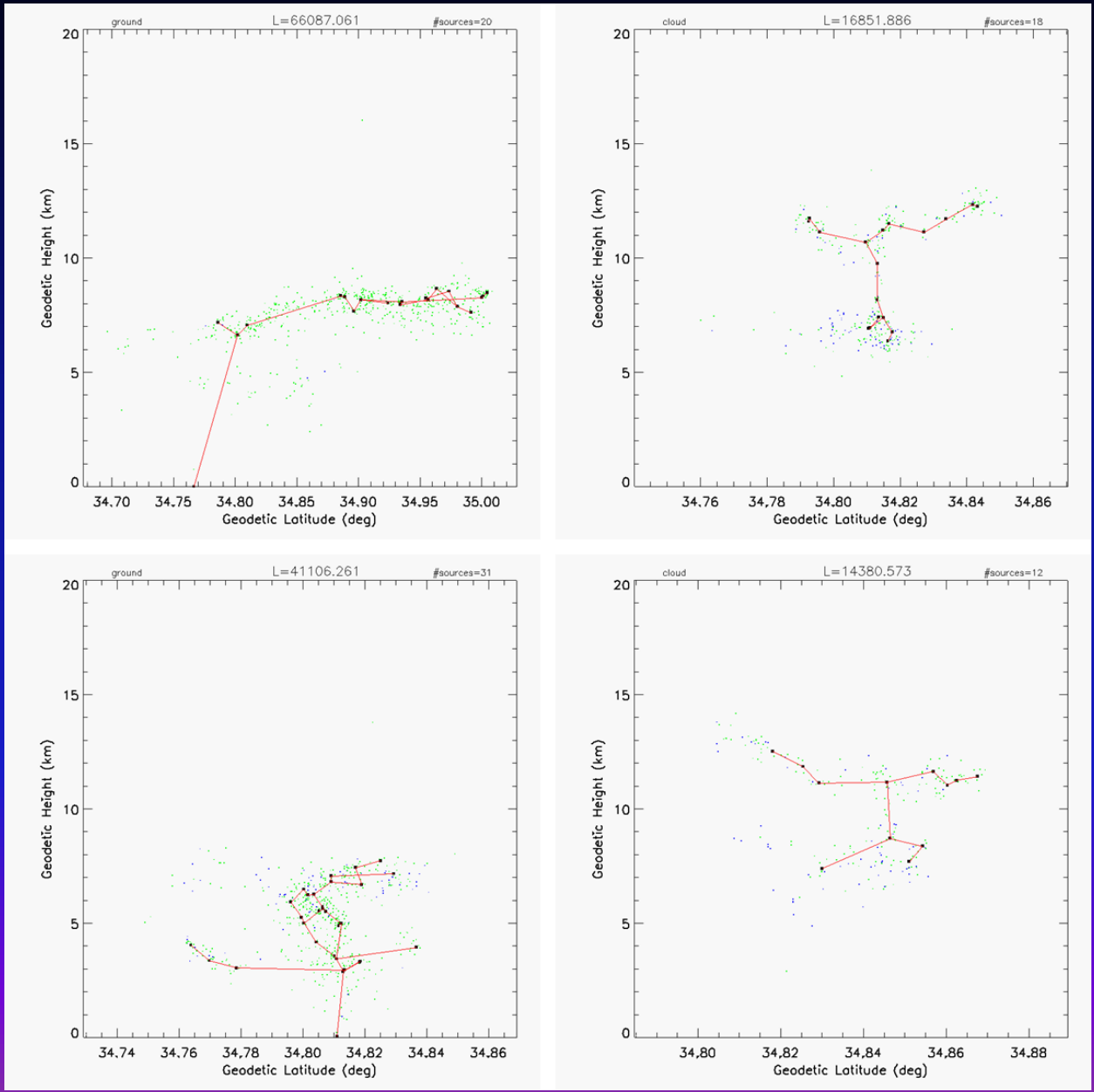
(based on Boccippio et al. 2001)



Overview of LNOM



Sample LNOM Channel Construction



LNOM NOx Profiles

- Based on Wang Lab results only
- Cooray nonreturn stroke processes to come!

I_{cld} = 15 kA

All Flashes:
2.34 moles/km
(1.41x10^{17} NO/J)

Ground Flashes:
9.79 moles/km
(3.72 moles/km)*

Cloud Flashes:
0.37 moles/km

***When subsequent stroke peak current is ½ previous stroke's peak.**

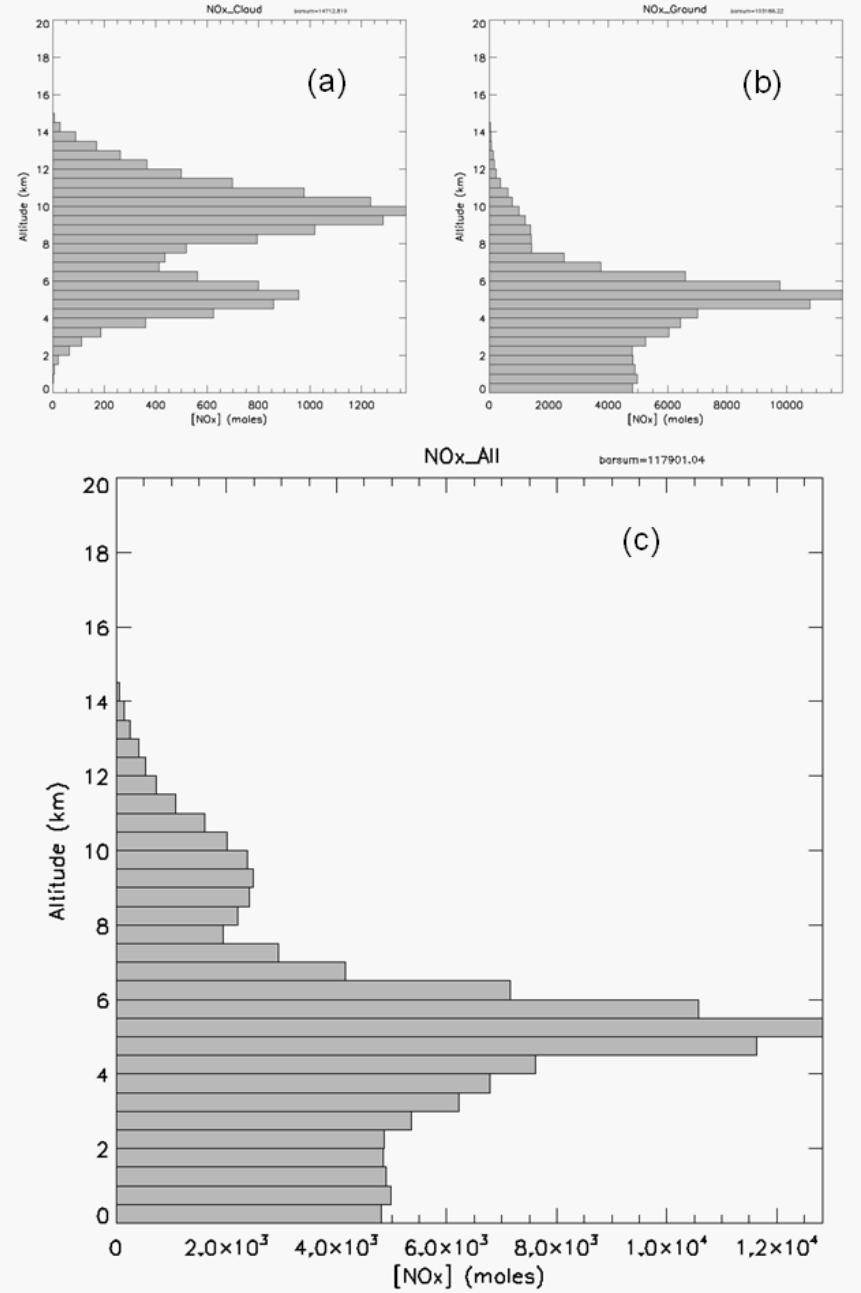


Figure 5. Lightning NOx Vertical Source Profile (VSP) for (a) cloud, (b) ground, and (c) all flashes. Cloud flash current is 15kA.