Model Analysis of high Aerosol Loads over India
As observed by MISR

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Research Question

- Do we understand high AOD in N-india?


Spada et al., poster
TM5: global zoom model

- Chemistry (CBM4)
- 5 aerosol classes
  - BC
  - POM
  - Sea salt (+ water)
  - Dust
  - Inorganic (SO4, NO3, NH4, + water)
- Emissions based on AEROCOM intercomparison
- Optics: externally mixed
Model set-up for Jan-Feb 2004 simulation
Analysis Swath by Swath
AOD (550 nm) highly variable
Enhancements over SW outflow region + NE
All individual data points

r = 0.49
2-monthly sampled mean (Jan-Feb 2004)
Spatial Correlation ($r=0.46$ for unsampled mean)
AERONET station Kanpur
Kanpur: temporal correlation
What AOD sources are missing over N-India?
Conclusions

- AOD comparison swath-by-swath
- Sampling issues are important
- TM5-MISR comparison reasonable
- N-India: underestimate AOD (> factor 2)
- Blame emission inventories?
Aerosol composition

Indo-gangetic valley (AOD = 0.19)
SW outflow area

SW outflow (AOD = 0.21)

Legend:
- DUST
- BC
- POM
- INORG_DRY
- INORG_H2O
- SS_DRY
- SS_H2O