



Ammonia-biosphere interaction from IASI and ERA5

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EGU2020-8495



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Ammonia-Biosphere from iASI and ERA5

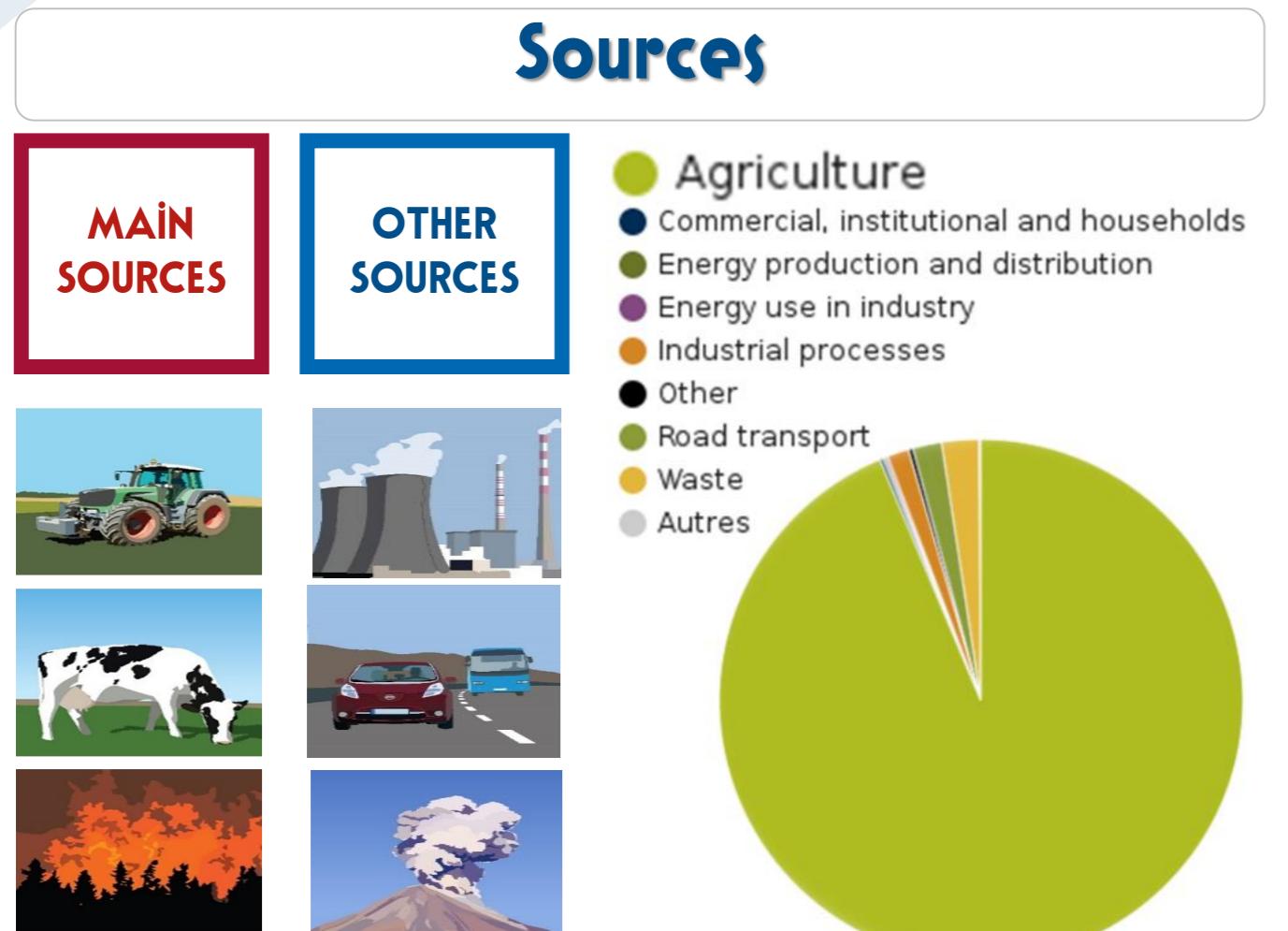
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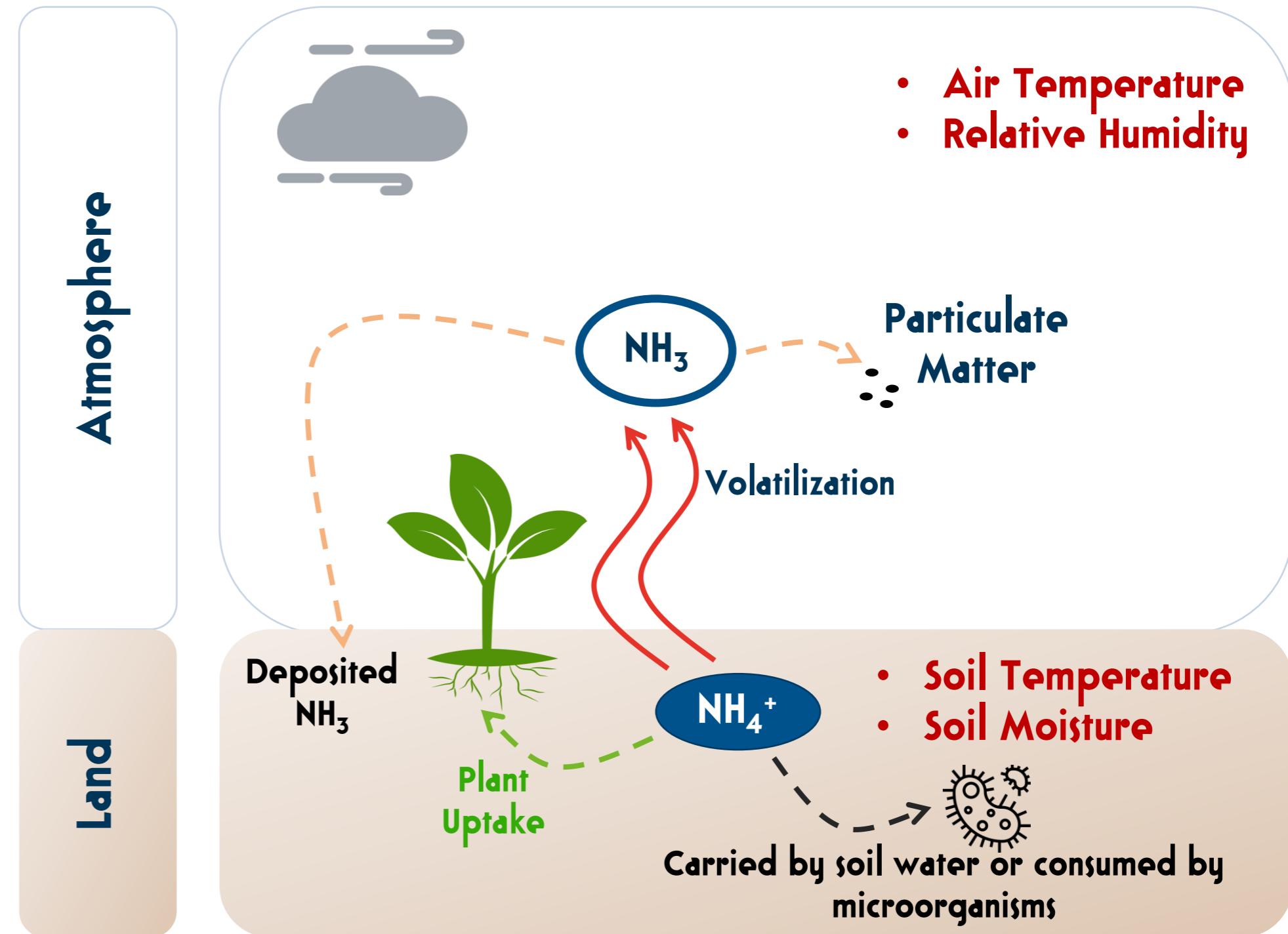


www.latmos.ipsl.fr

How does ammonia affect the environment?



How will climate change affect the abundance of atmospheric ammonia?

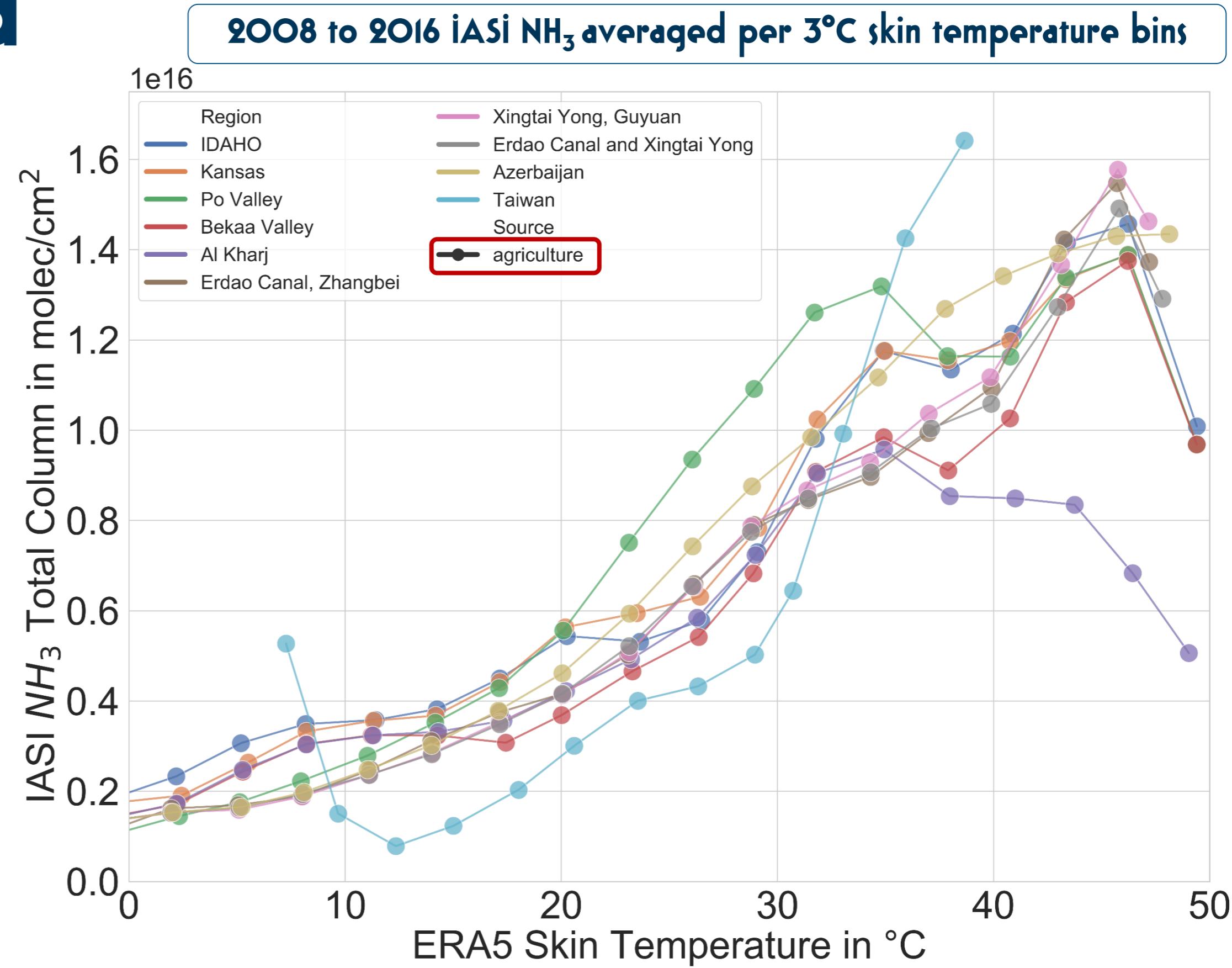
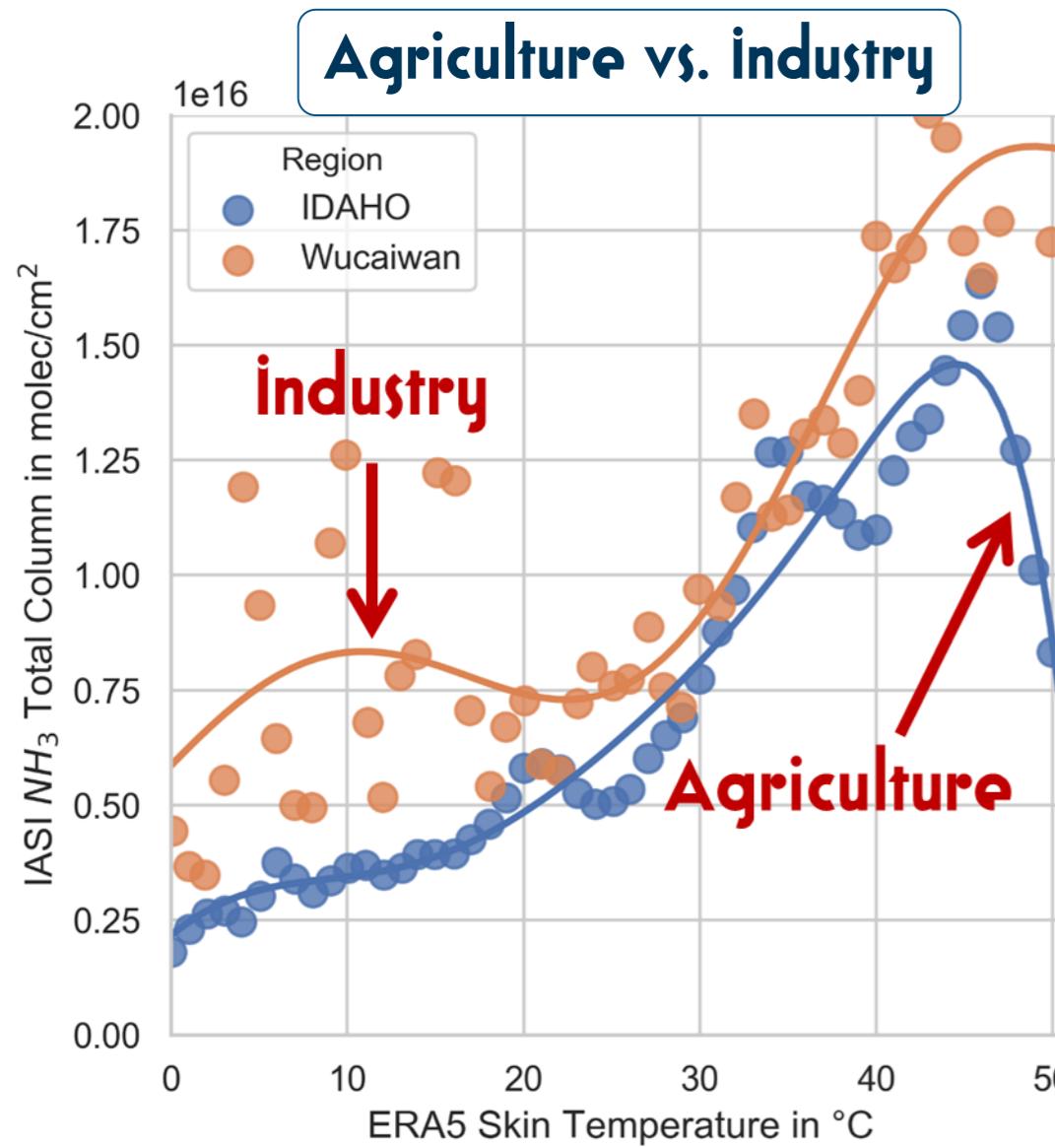


Data used are from IASI (NH_3) and ERA5.

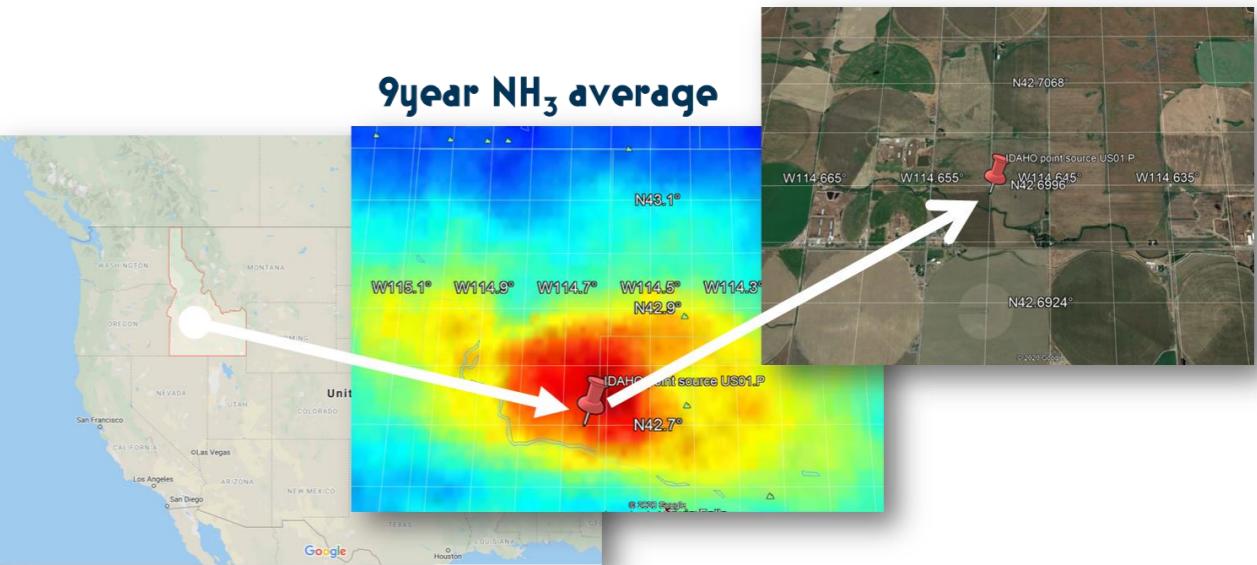


Ammonia/Land

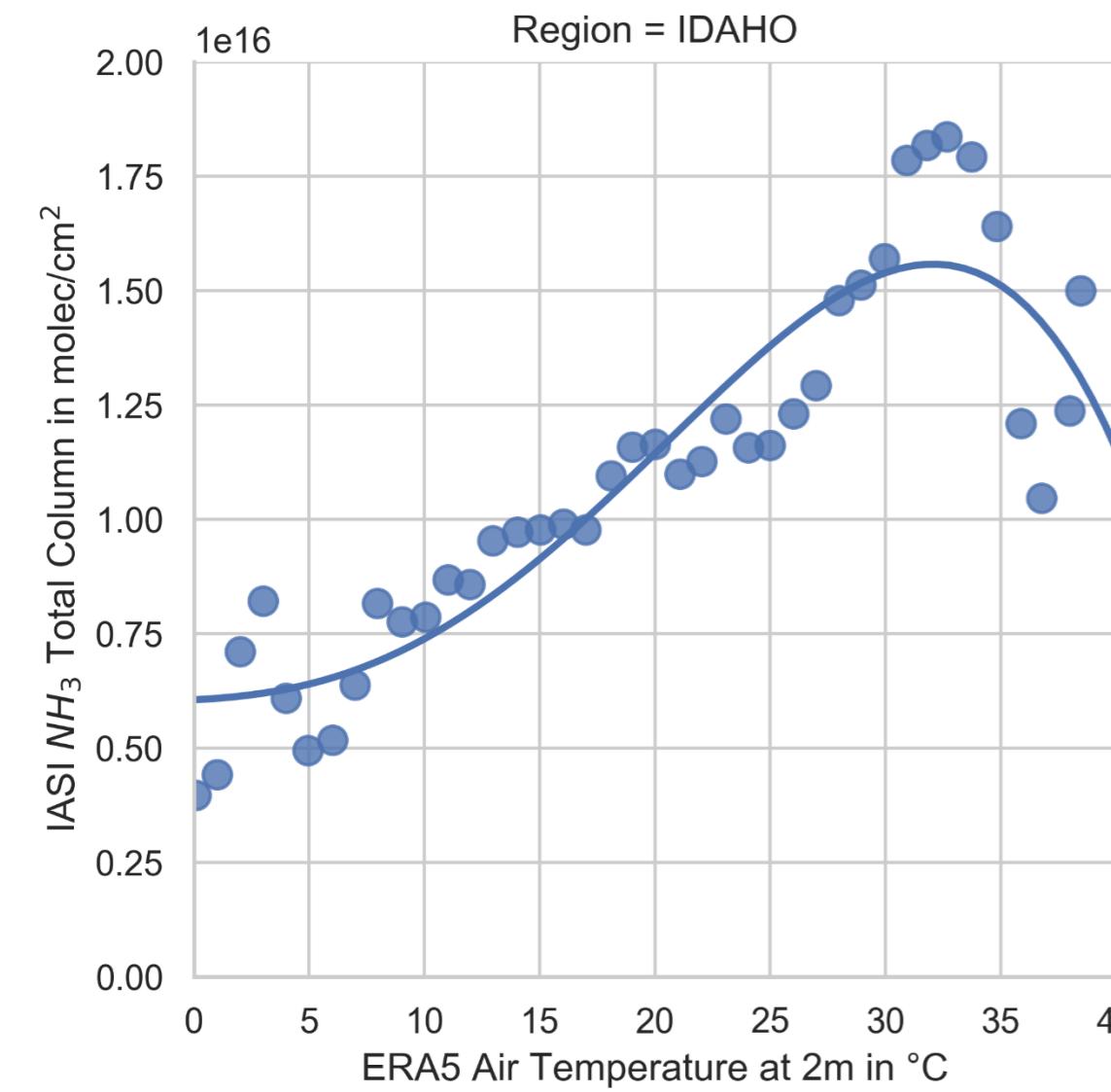
In All the agricultural regions, NH_3 concentration increased proportionally with Skin Temperature in an exponential manner.



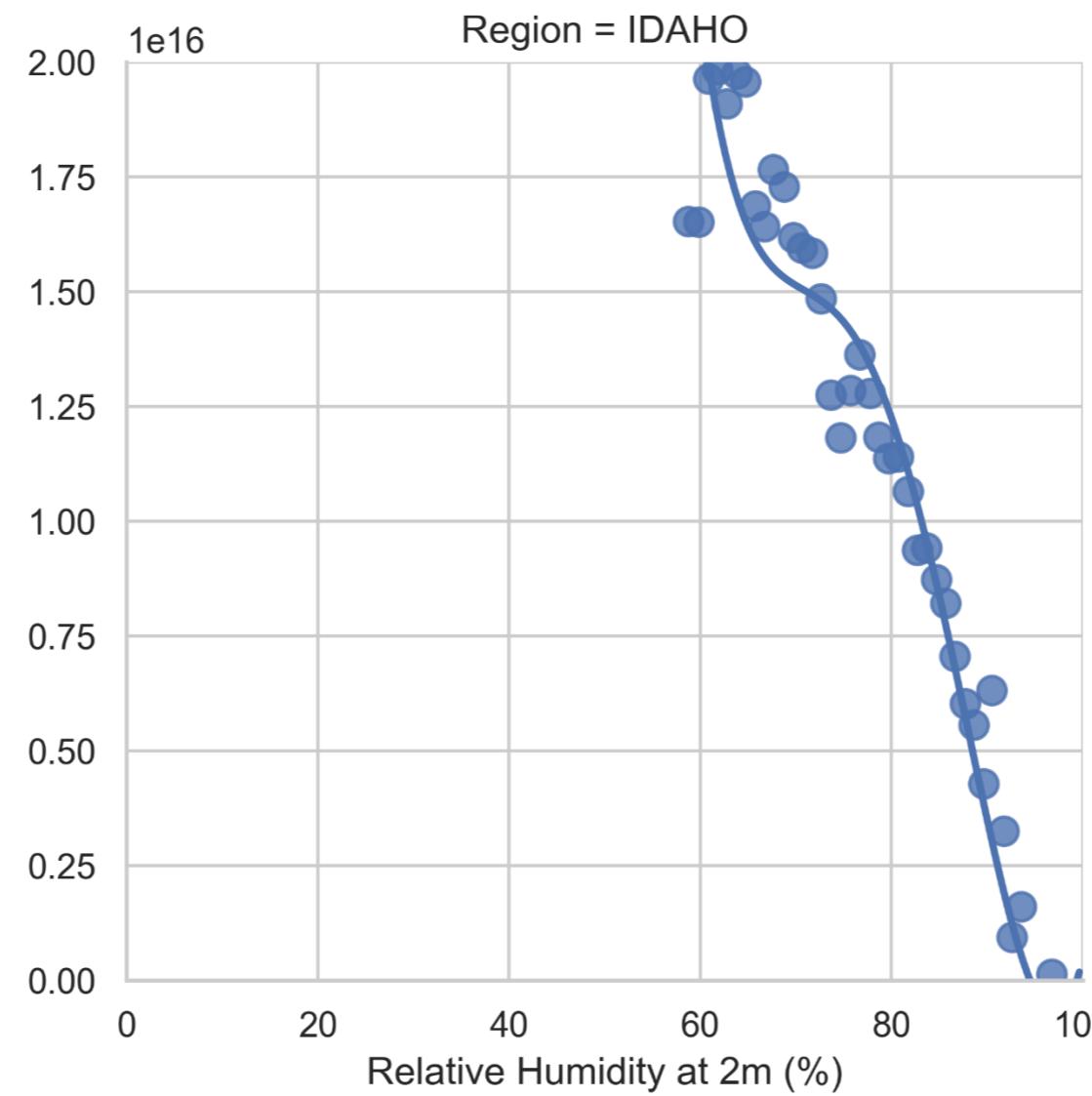
Ammonia/Land/Atmosphere



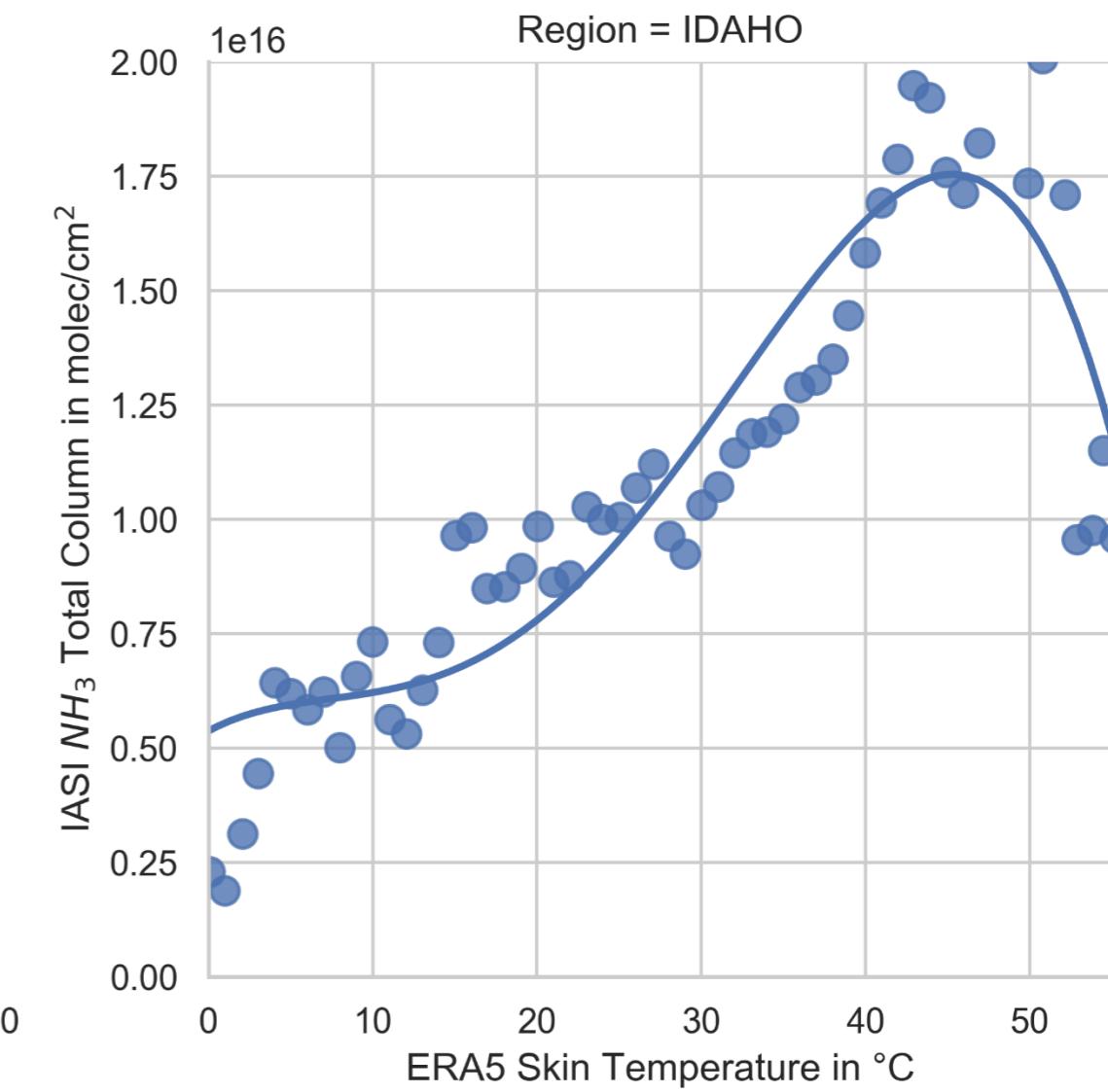
Air Temperature at 2m



Relative Humidity at 2m



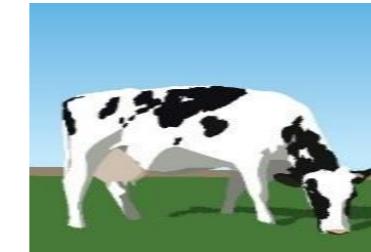
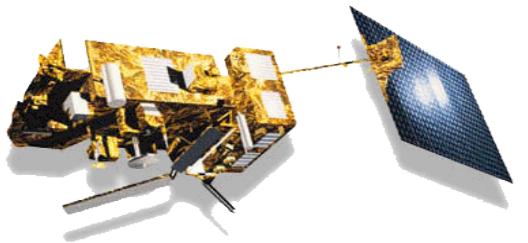
Skin Temperature



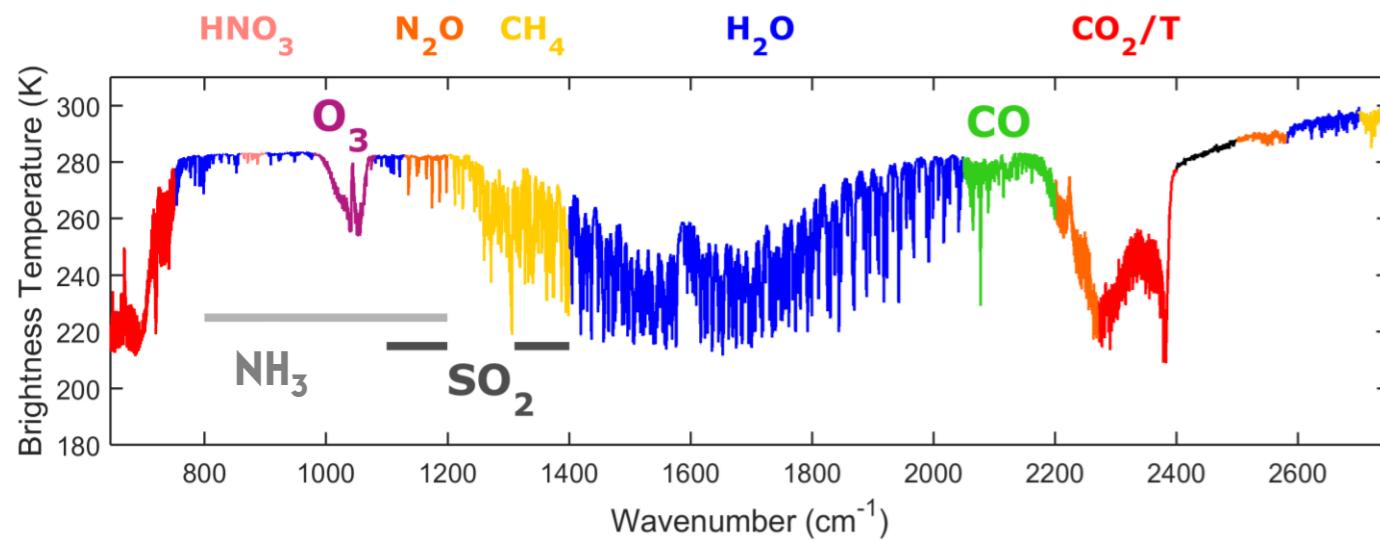


Back-up Slides

iASI on the Metop Satellites

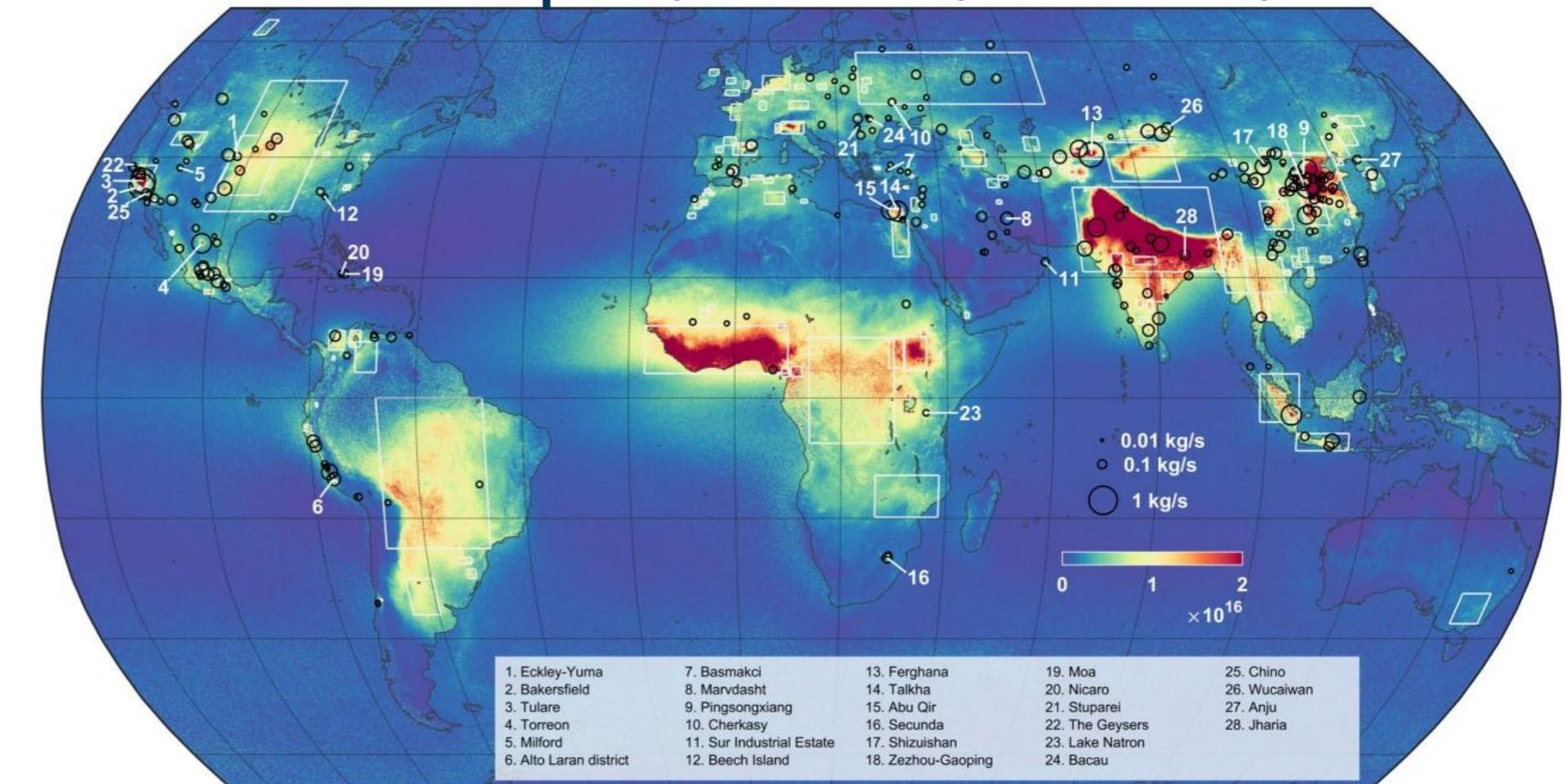


iASI brightness temperature spectrum



- First detection of ammonia from iASI in 2009
- More than 200 hotspots identified

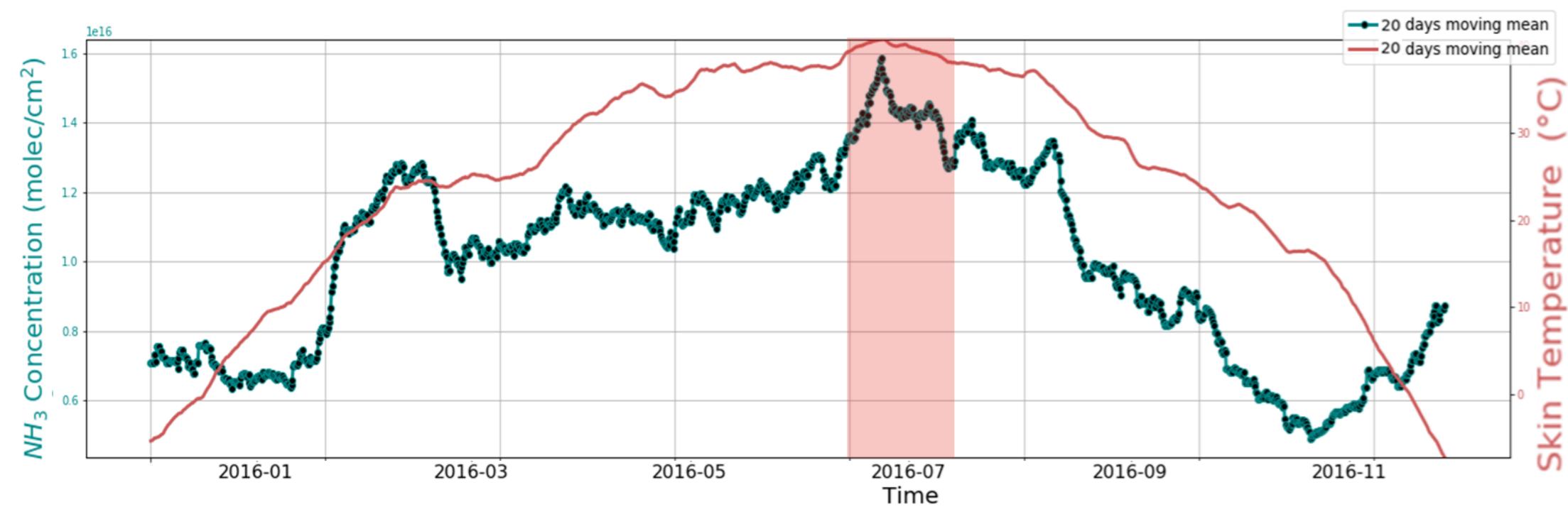
NH₃ Hotspots (iASI NH₃ 9year Mean *)



Ammonia/Land

NH₃ volatilization is enhanced by high temperature and low soil moisture.

iASI NH3 vs. ERA5 Skin Temperature



iASI NH3 vs. ERA5 Soil Moisture - layer 1 [0 to 7cm of soil]

