

The Study Air Pollution in more Details about NO₂

By

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Motivation

NASA and European Space Agency (ESA) pollution monitoring satellites detected significant decreases in nitrogen dioxide (NO_2) over China from January 1 to February 25, 2020. The maps show concentrations of nitrogen dioxide, a noxious gas emitted by motor vehicles, power plants, and industrial facilities. Figure 1. and 2. presents NO_2 values across China from January 1-20, 2020(before the quarantine) and February 10-25, 2020(during the quarantine)*.

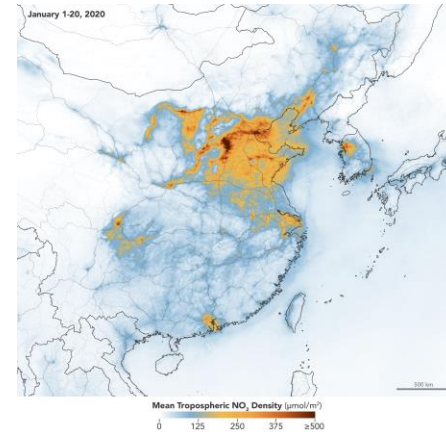


Figure 1. January 1-20, 2020*

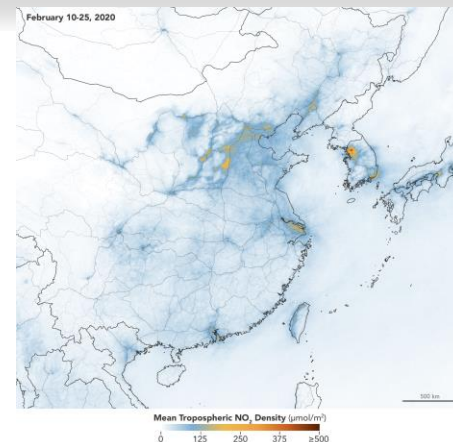


Figure 2. February 10-25, 2020*

The Big Question?

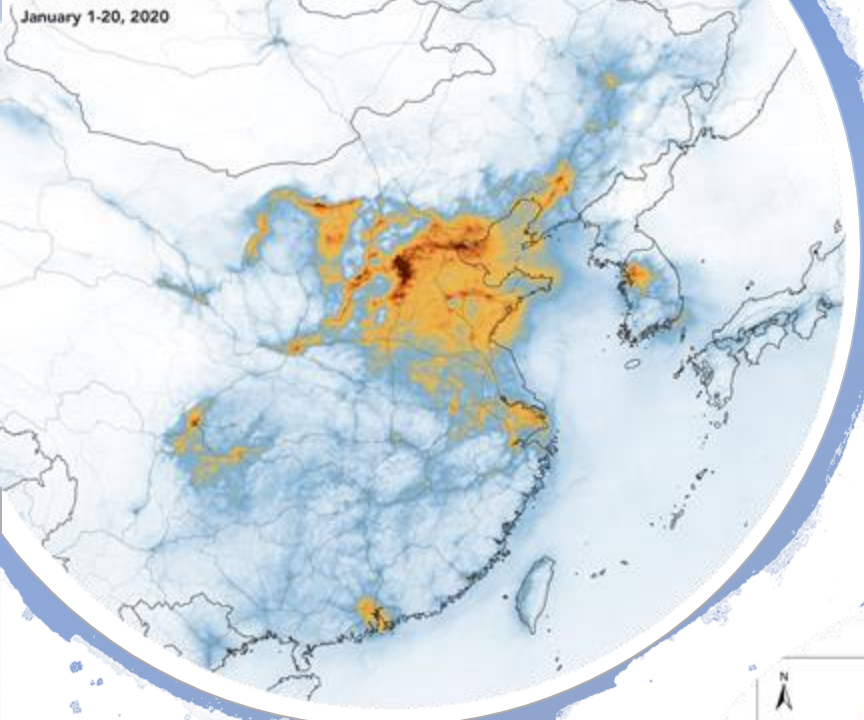


Figure 3. NO₂ Density*

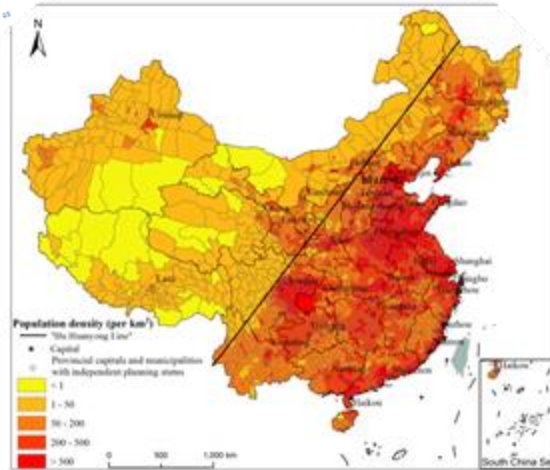


Figure 4. Population Density

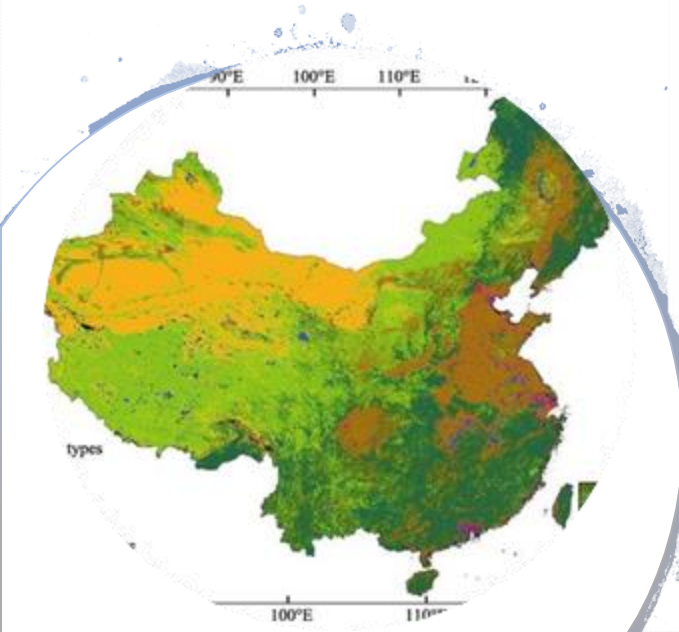


Figure 5. Land Use



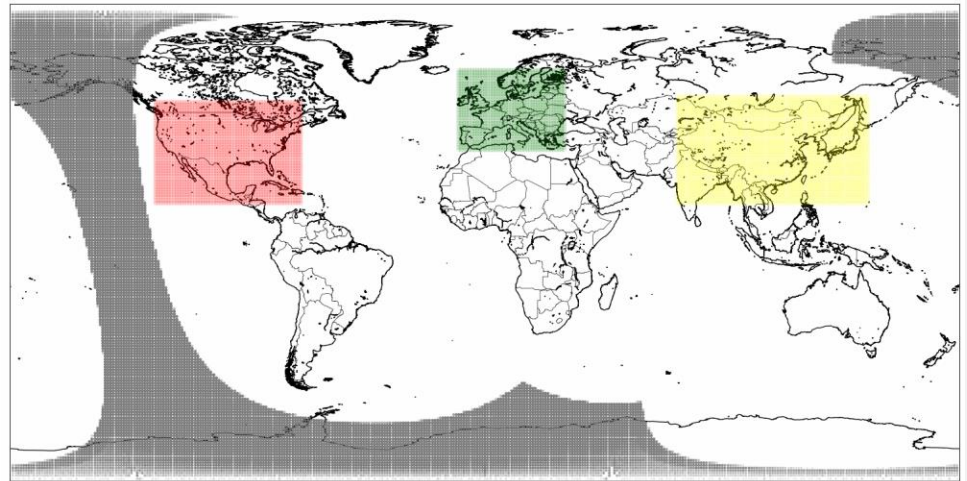
The Project

will present the relationships between NO₂ with

1. Population (surrogate of anthropogenic pollution)
 2. Latitude (surrogate of solar zenith angle)
 3. HCHO (surrogate of chemical radicals)
 4. Temperature
 5. Ozone
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Public Data Sources

- <https://s5phub.copernicus.eu/dhus/#/home>
- <https://urs.earthdata.nasa.gov>
- The study will gather the data set within the past 2 years(2018-2019) for 3 regions: USA, Western Europe and Eastern Asia.



References

* Airborne Nitrogen Dioxide Plummets Over China (2020).

<https://www.earthobservatory.nasa.gov/images/146362/airborne-nitrogen-dioxide-plummets-over-china>

** Descartes Labs.

<https://www.descarteslabs.com>