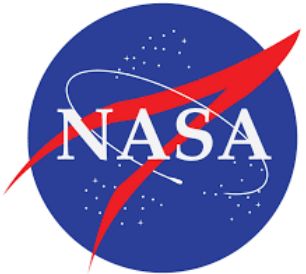


RO Haiti

Toward the creation of an air pollution monitoring system ?

Jean Paul VERNIER, NASA



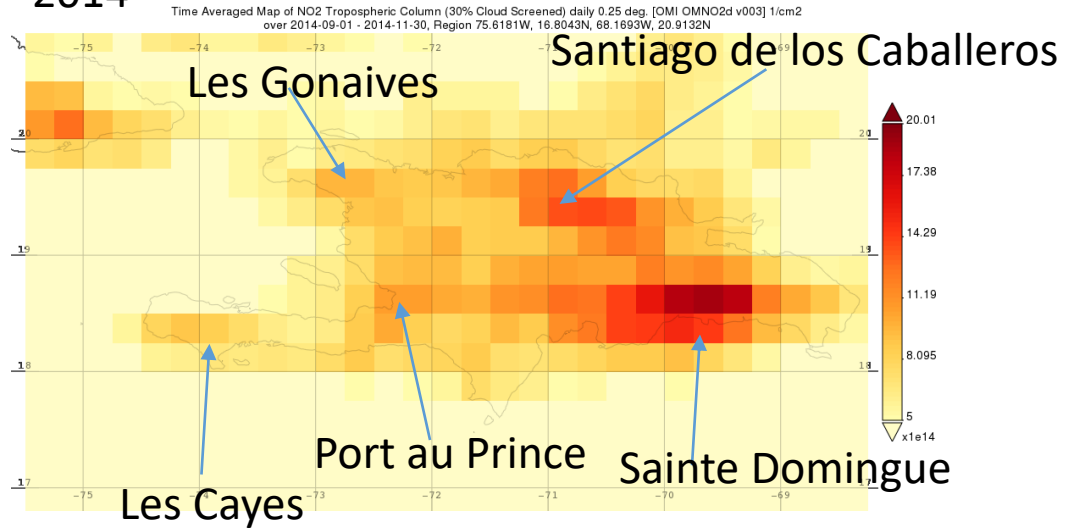
Can we use pollution observations from space to track the impacts of hurricane Matthew ?



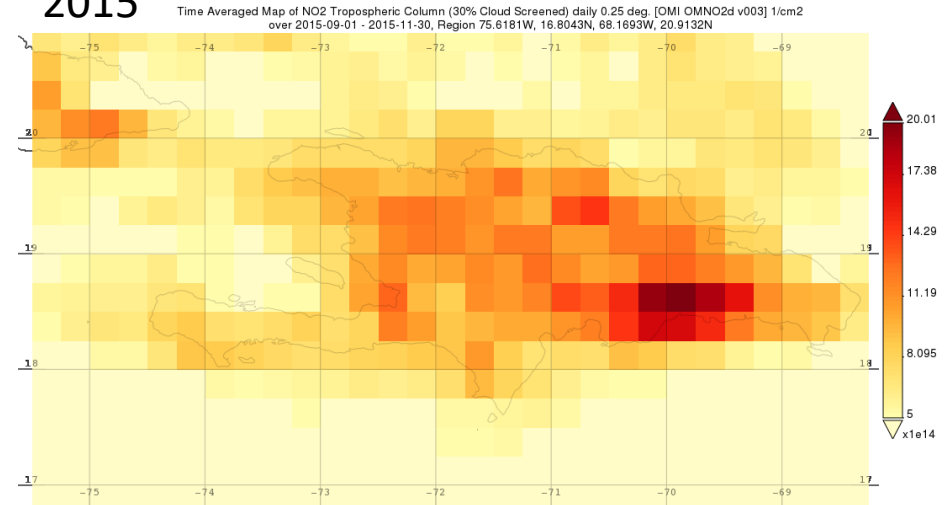
Pollution monitoring in Haiti before/after Hurricane Matthew (Sept/Oct/Nov)

**NO₂ tropospheric
Column from OMI/Aura**

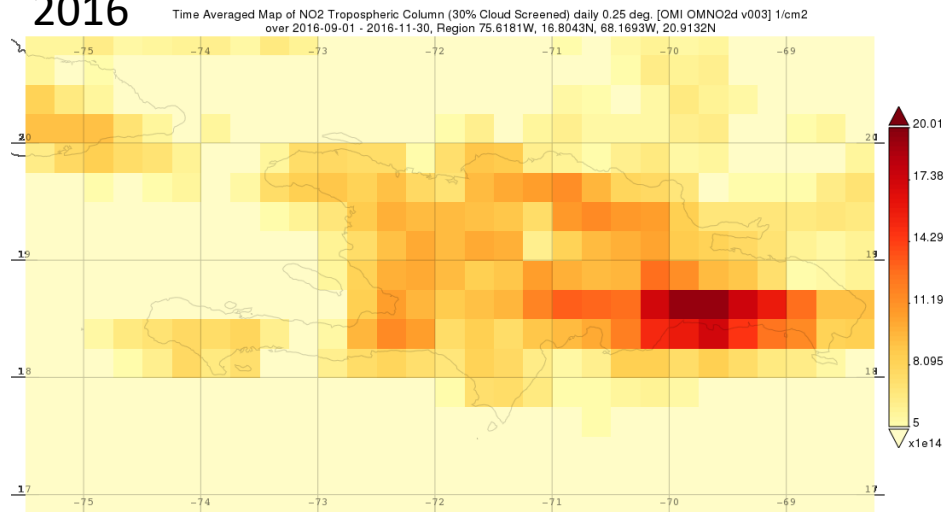
2014



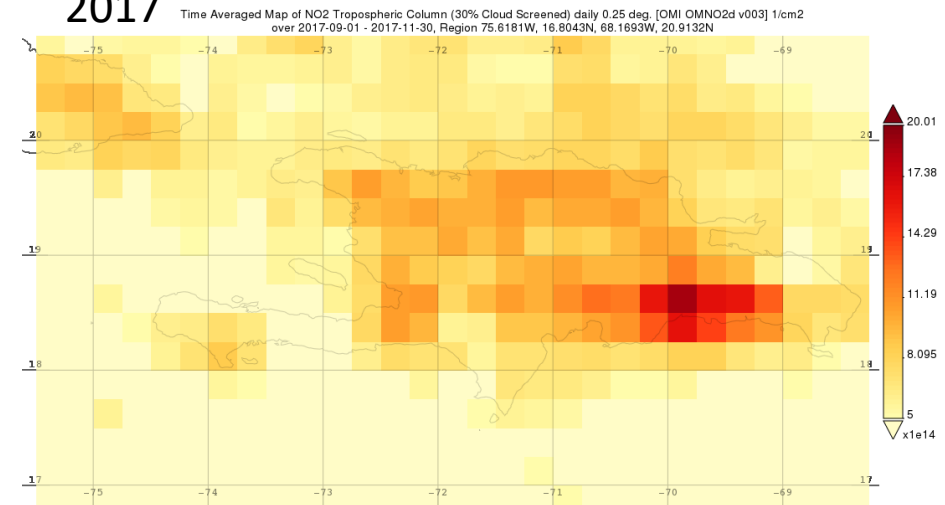
2015



2016



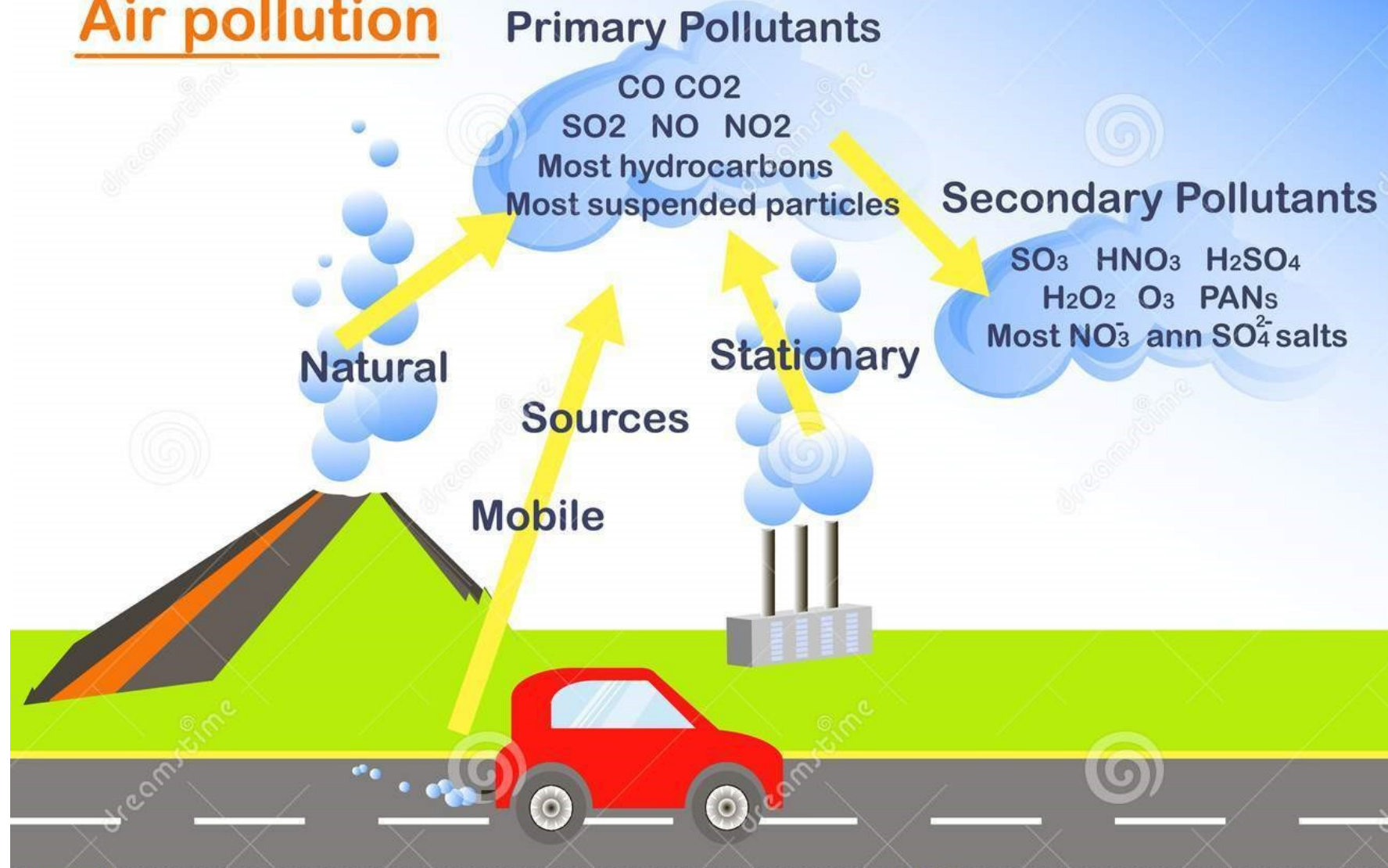
2017



RO Haiti pointed out the lack of air quality monitoring system...



Air pollution



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Developing an air quality monitoring system in Haiti

- Work with local health organization to assess pollution impacts on population and define sensitive areas (e.g. large cities, industrial areas).
- Measure the major pollutants affecting air quality and compare with HWO (e.g. particulate matter PM2.5, NO2 (primary), O3 secondary formation)
- Monitor air quality from space (CEOS)
- Translate **satellite observations** into air quality products (from column measurements to air quality on the ground)
- Validate satellite observations with **ground-based measurements**
- Forecast of air quality using regional chemical transport model (e.g. WRF Chem)
- Disseminate information through a web platform and other media.



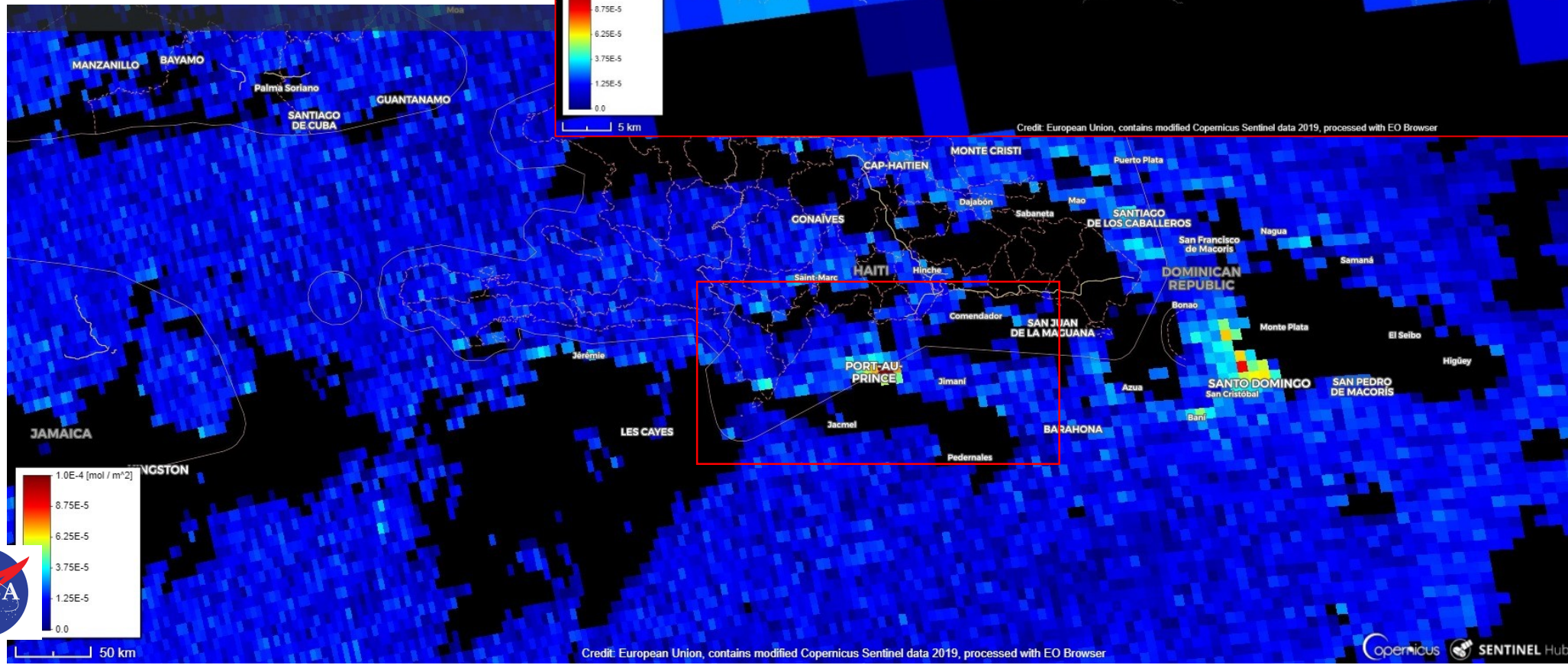
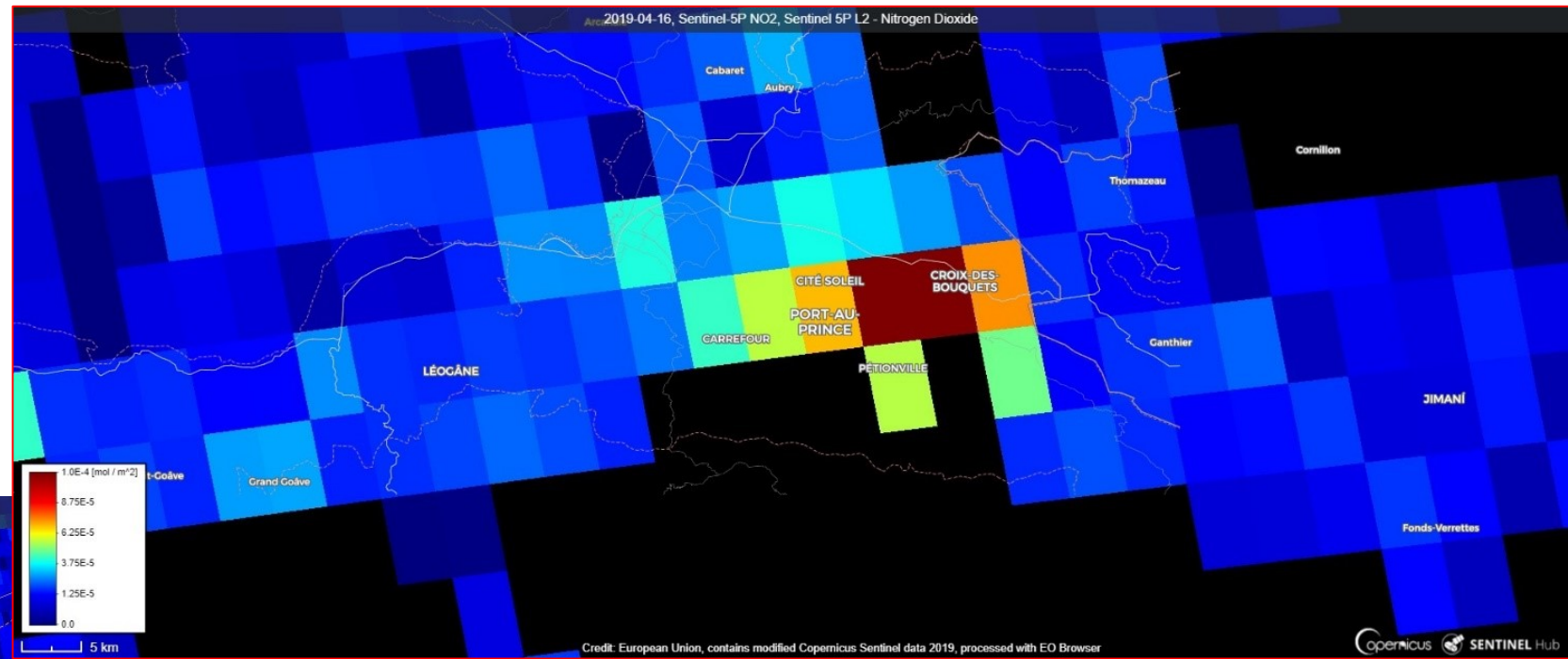
CEOS/RO Haiti/Satellite observations of NO₂

- OMI/Aura (long-term monitoring) since 2002
- OMPS/NPP (since 2014), 50x50 km, improved horizontal resolution
- Tropomi/SP5 (since 2017), 7x7 km improved horizontal resolution



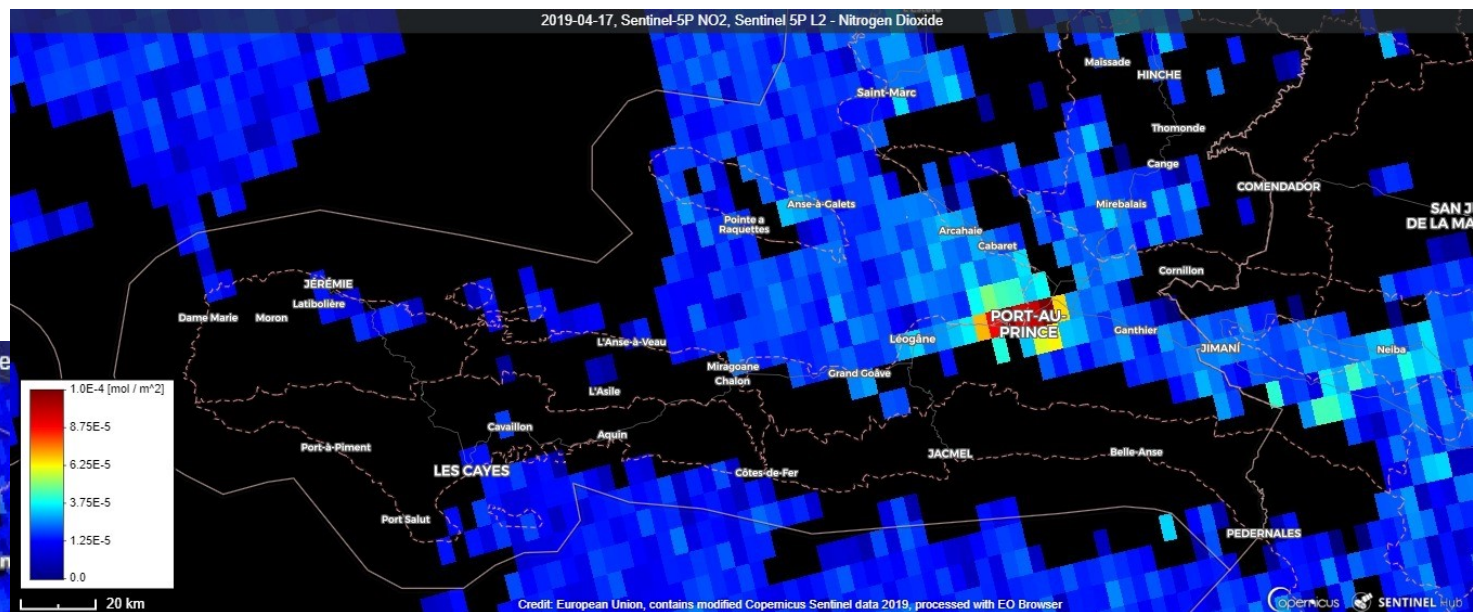
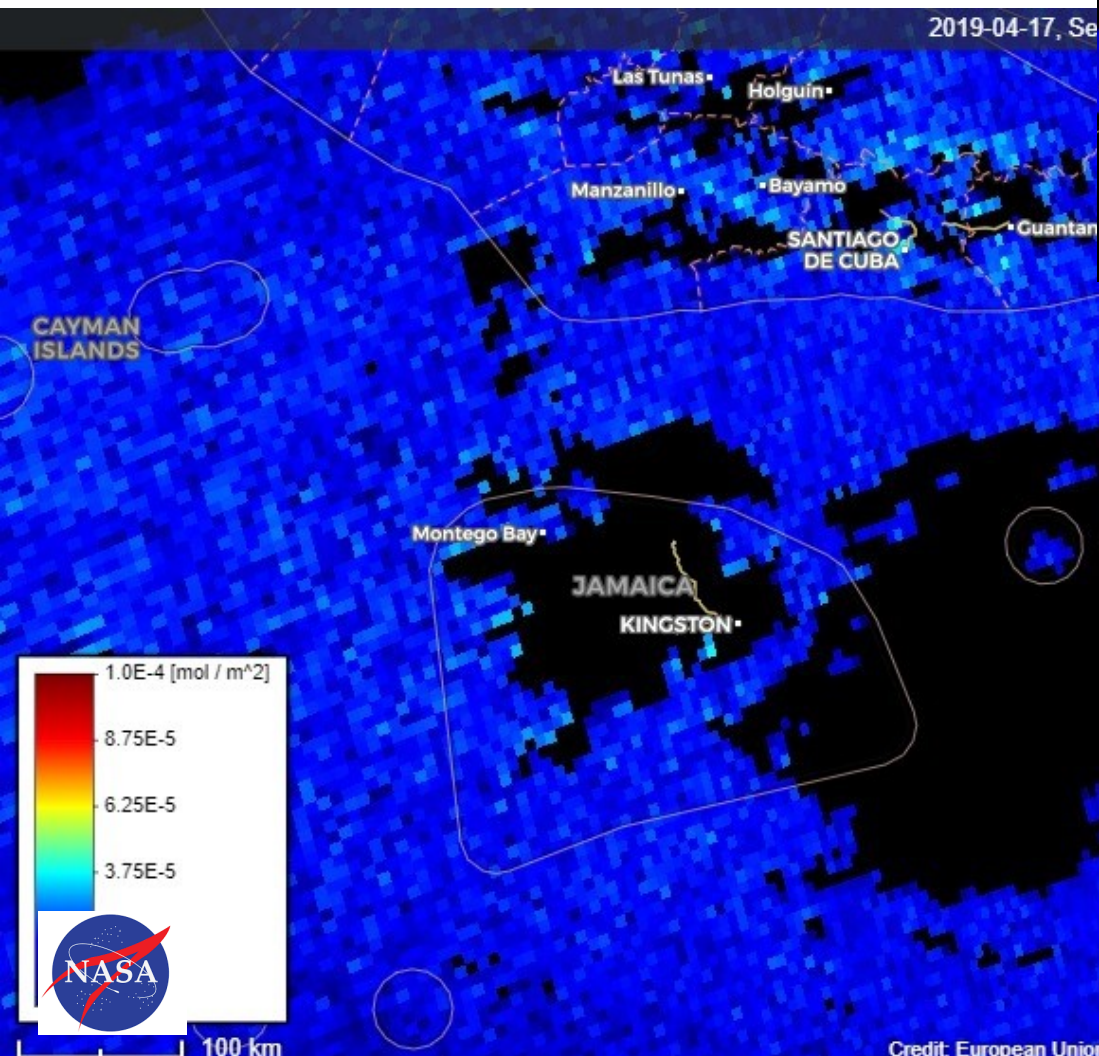
Tropomi/SP5:

04/16 /2019



Tropomi/SP5:

04/17/2019

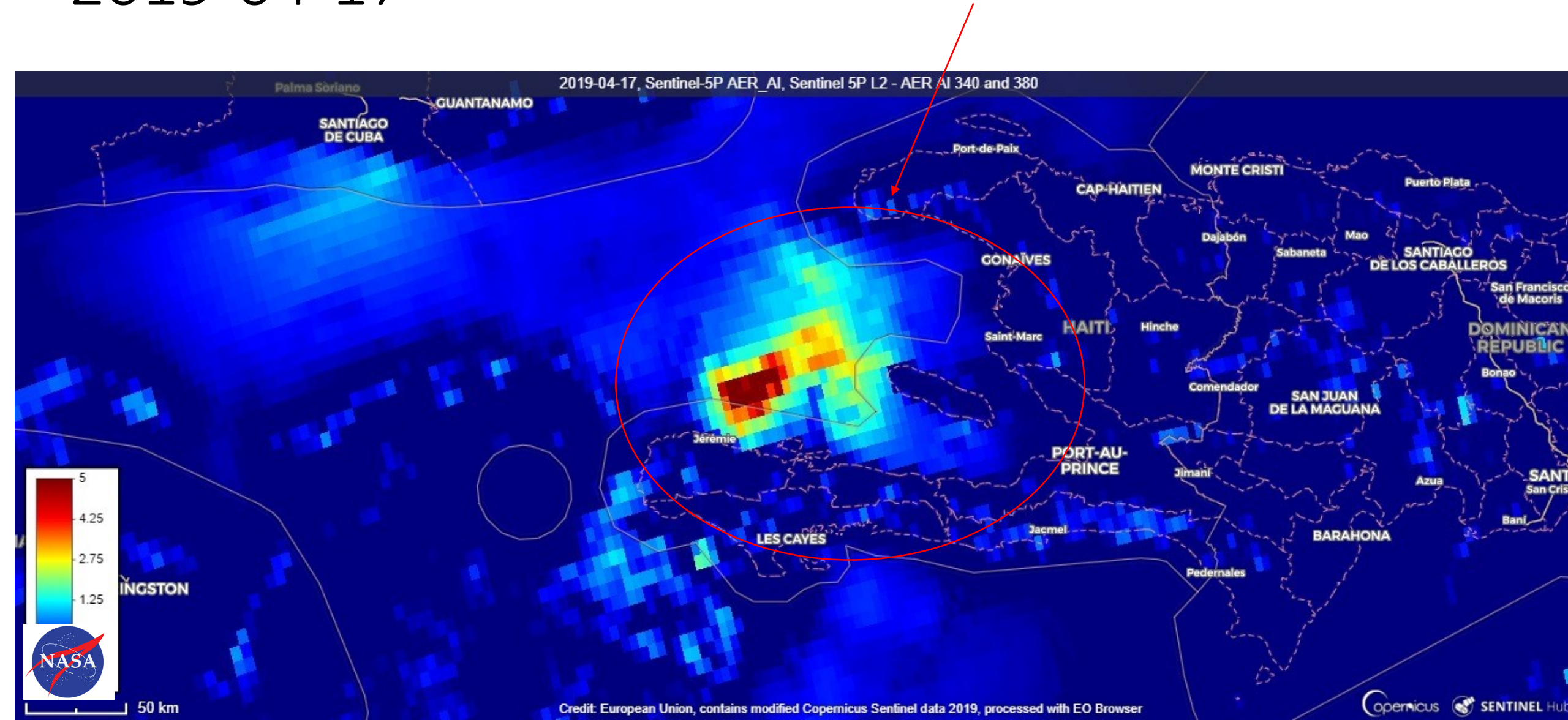


Credit: European Union, contains modified Copernicus Sentinel data 2019, processed with EO Browser

Aerosol production (AI)

2019-04-17

Absorbing aerosols offshore, source ???



Conclusions/Next Steps

- Developing an air quality system in Haiti is a major project
- Role of CEOS RO: show, analyze and disseminate satellite Obs of air quality for end users
- Need to relay to local organization to make it applicable

