Global air pollution maps now available

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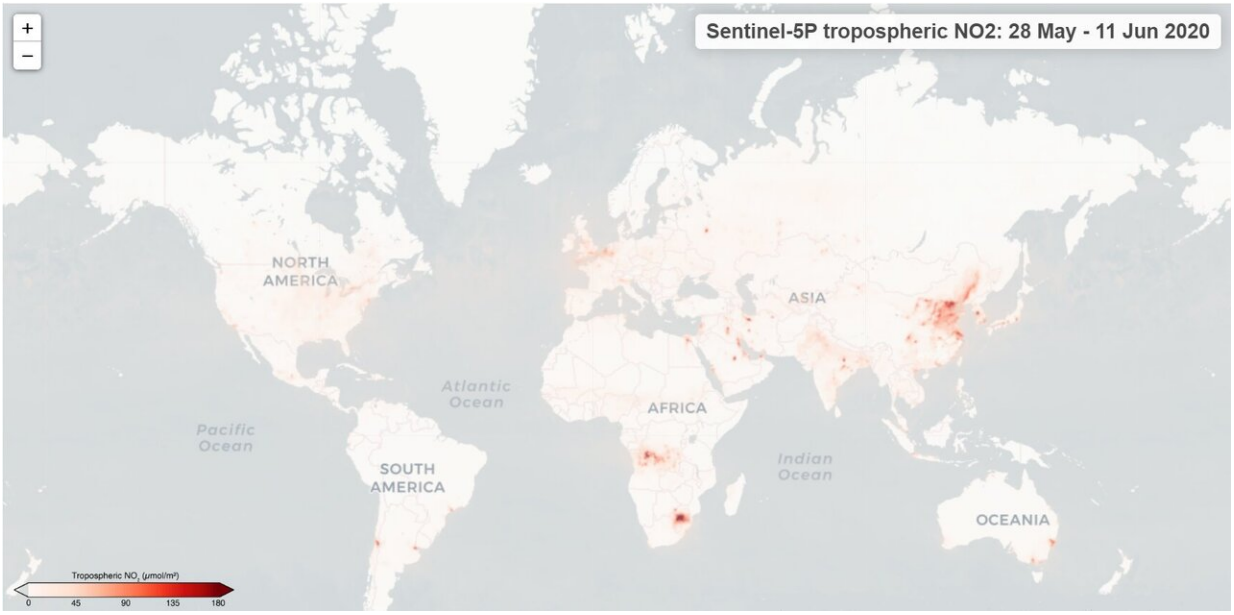

Credit: contains modified Copernicus Sentinel data (2020), processed by S[&]T

A new online platform that allows for the tracking of air pollution worldwide is now available to the public. The maps, which use data from the Copernicus Sentinel-5P satellite, show the averaged nitrogen dioxide concentrations using a 14-day moving average. The maps not only show changes over time on a global scale, but also provide the possibility for users to zoom in to areas of interest, for example any city or region over Europe.

The averaged maps also reflect the effects of the COVID-19

lockdown—with drastic reductions of nitrogen dioxide concentrations visible over many areas. These effects can now be easily explored across the globe.

Nitrogen dioxide concentrations in our atmosphere vary widely on a day-to-day basis owing to the fluctuations of emissions, as well as variations in weather conditions such as sunlight, temperature and wind, all of which can affect the lifetime of the gas in the atmosphere.

For these reasons, it is necessary to analyze data over a substantial period of time—in this case 14 days—as it allows for the accurate mapping and analysis of nitrogen dioxide concentrations across the globe.

Nitrogen dioxide is produced from power plants, vehicles and other industrial facilities and can have significant impacts on human health—increasing the likelihood of developing respiratory problems.

With air quality a serious concern, the Copernicus Sentinel-5P satellite was launched in 2017 to map a multitude of air pollutants around the globe. Copernicus Sentinel-5P carries the Tropomi instrument—a state-of-the-art instrument that detects the unique fingerprint of atmospheric gases to image air pollutants more accurately and at a higher spatial resolution than ever before.

The mapping portal is part of the Sentinel-5P Product Algorithm Laboratory (S5P-PAL) – an ongoing project funded by the European Commission. S5P-PAL is a project that allows fast and cost-efficient Sentinel-5P prototype product development (for example bromine monoxide and water vapor) and the generation of higher level products like global maps. New mapping portals for the carbon monoxide product and additional functionalities, for example the selection of an area and time-period to investigate time-series of measurements, are currently in development.

The S5P-PAL is also part of the new "Rapid Action on Coronavirus and Earth observation' dashboard, also known as RACE. The platform provides access to key environmental, economic and social indicators to measure the impact of the coronavirus lockdown and monitor post-lockdown recovery.

More information: maps.s5p-pal.com/

Provided by European Space Agency