Air pollution context and climatology – learning from COVID-19 lockdowns

Nationwide reduction in transport intensity began mid-March, reached a minimum in early April. Major sectors contributing emissions of NOx, VOCs and PM.

The UK has had unusual meteorology in 2020. Post-lockdown - significant Easterly component, with transboundary pollution contributions.
Significant reductions seen UK-wide in NOx and NO$_2$

**Top:** Raw data from 225 air quality measurement sites across the UK.
**Bottom:** Same data but corrected to account for meteorological variability.

Compared to 2019, PM$_{2.5}$ higher during lockdown - due to Easterly weather.
But using computer models, PM$_{2.5}$ has been lower in many places compared to a business-as-usual scenario.
Highlights significant AQ influence of wider European emissions.
Exposure to pollution depends where you live, work and how you commute

- Less commuting reduces exposure in London, but could be offset by higher indoor pollution, for example from additional cooking.
Lower NOx emissions in isolation can lead to local increases in ozone

Forecasts of a Springtime ozone case study under COVID-19 emissions

Forecasts of a summertime ozone case study under COVID-19 emissions

- Emphasizes the importance of managing all the key pollutants together with coherent strategy that recognizes the chemical interconnections