

Air pollution status over China during lockdown caused by COVID-19

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In response of COVID-19 outbreak, China imposed lockdown in Wuhan from 23 January, 2020. Within days of "Wuhan lockdown", restrictions on travel and social and economic activities were imposed on other Chinese cities as well, which inevitably altered the proportion of human-made air pollution than previous years. This lockdown provided an important opportunity for atmospheric scientists to unravel several uncertainties related to the impacts of man-made air pollutants on climate change, water cycle, human health, agriculture and so on. Grabbing this opportunity, we attempted to understand the change in air pollution over China during lockdown period and its possible link with energy consumption pattern. Aerosol, trace gases, energy consumption, and night light intensity for January - April of 2016 - 2020 available from satellite and surface observation, reanalysis, and government bodies are used. Our preliminary analyses indicate substantial reduction in energy consumption and air pollutions in industry and possibly transportation sector, but not significant change in residential sector during lockdown period. This resulted to reduce light-scattering aerosols in higher proportion than light-absorbing aerosols, and comparatively southern part sees more reduction than northern part.

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