Will the pandemic of COVID-19 change climate?: tests using MIROC-ES2L earth system model

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The world is now being altered by the pandemic of COVID-19 that has limited economic activity in the first half of 2020 to protect human lives from the virus. This restriction on economic activity has resulted in lower emissions of anthropogenic greenhouse gases and aerosols (Le Quere et al. 2020). Will this reduction in emissions have an impact on the climate? Using an earth system model MIROC-ES2L (Hajima et al. 2020) used to project global warming in CMIP6, we conducted sensitivity experiments to reduce anthropogenic greenhouse gases, black carbon, and SO2 by 20% in 2020 and 2021, branching off from the global warming scenario experiments submitted to CMIP6 (the 20% reduction in greenhouse gas emissions is driven by an 18.6% reduction in per capita gross domestic product in 2020).

As a result, it was suggested that the Arctic region may have a warming effect. It is also suggested that this may modulate decade-scale climate change. Further analysis will be carried out and presented.

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