Less aviation during the global lockdown had a positive impact on the climate

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The researchers led by Professor Quaas analyzed satellite images of clouds in the northern hemisphere, between 27° and 68° North, in the period from March to May 2020. They then compared these with images from the same period in previous years. "Crucially, our studies reveal a clear causal relationship. Since clouds vary considerably depending on the weather, we would not have been able to detect the effects of air traffic in this way under normal circumstances. The period of lockdown due to the COVID-19 pandemic offered a unique opportunity to compare clouds in air traffic corridors at very different traffic levels."

Analysis of the data collected showed that nine per cent fewer cirrus clouds formed during the global lockdown, and that the clouds were also two per cent less dense," said Professor Quaas. "The study clearly demonstrates that aircraft contrails lead to additional cirrus clouds and have an impact on global warming." According to Professor Quaas, the data collected confirmed previous estimates based only on climate models: "Our study may improve the ability to simulate these effects in climate models."

Despite the team's findings, there has still not been enough research into the impact of aviation on global warming. A European research collaboration involving Professor Quaas's research group is currently investigating the precise mechanisms in detail. "The tough global lockdown has been helpful in terms of our research. In order to mitigate or even avoid the warming effect on the climate, flight routes could be adapted in the future to avoid cirrus cloud formation, for example by separating flight corridors," said the Professor of Theoretical Meteorology at Leipzig University.
