

COVID-19 and Meteorology: Abstracts

8 September 2020, 14:00 (CEST)

Title: Cascading risks of infectious diseases from climate change in Europe

Jan C. Semenza, Head of the Health Determinants Programme at the European Centre for Disease Prevention and Control (ECDC)

Abstract: Climate change can trigger a sequence of events of significant magnitude with consequences for infectious diseases, but early warning systems can intercept these cascading risks.

Title: The effect of the COVID-19 lockdown in early 2020 on pollution

F. Fierli, A. Cacciari, R. Munro, J. Wagemann (all EUMETSAT), C. Clerbaux (both LATMOS & AC-SAF), *Acknowledgements to S. Hassinen (FMI & AC-SAF), P Valks, D. Loyola (DLR & AC-SAF)*

Abstract: We discuss a combined analysis of the changes in atmospheric composition during spring 2020 based on the observations of satellite instruments.

We discuss advantages and drawbacks of remote sensed data and then evaluate the changes in pollutants tropospheric columns, focusing on Nitrogen Dioxide (NO₂). The variation in the first part of 2020 is put in perspective with the longer time series (from 2007) to take into account the inter-annual variability and the longer-term reduction of pollutants concentration due to the air-quality control measures in force in several countries worldwide. NO₂, that is influenced by road transport emissions is overall halved in polluted regions during the stricter lockdown phase with respect to the average seasonal evolution. The preliminary analysis from Environmental Agencies on the observed changes from the air quality network is a reference to assess the reliability of satellite-derived information. We focus specific regions in Europe. Here the agreement of satellite observations is remarkably good with the air quality network at the ground. We will also mention the impact on chemicals as Carbon Monoxide and Ammonia and the changes after release of lock-down measures with a progressive return to the average concentrations in most world areas.

Title: The impact of Covid-19 on the weather forecast

Thomas Haiden, Head of Verification and Observation Monitoring at ECMWF

Abstract: Aircraft reports are an important source of information for numerical weather prediction (NWP). Their number has dropped considerably due to the pandemic but despite this it is difficult to see a clear signal in forecast skill. This is because satellite data have continued as normal during the period, and because natural variations in predictability on seasonal and inter-annual timescales are superimposed on any Covid-19 signal. Another reason for the resilience of NWP has been the assimilation of alternative and new observational data, such as additional radiosonde ascents, additional radio occultation measurements, or MODE-S aircraft observations. One way to get a robust estimate of aircraft impact are data denial experiments. They show that the largest impact (on the order of 10% in the very short range) is in the upper troposphere, but a statistically significant signal extends throughout the troposphere and into the medium range.