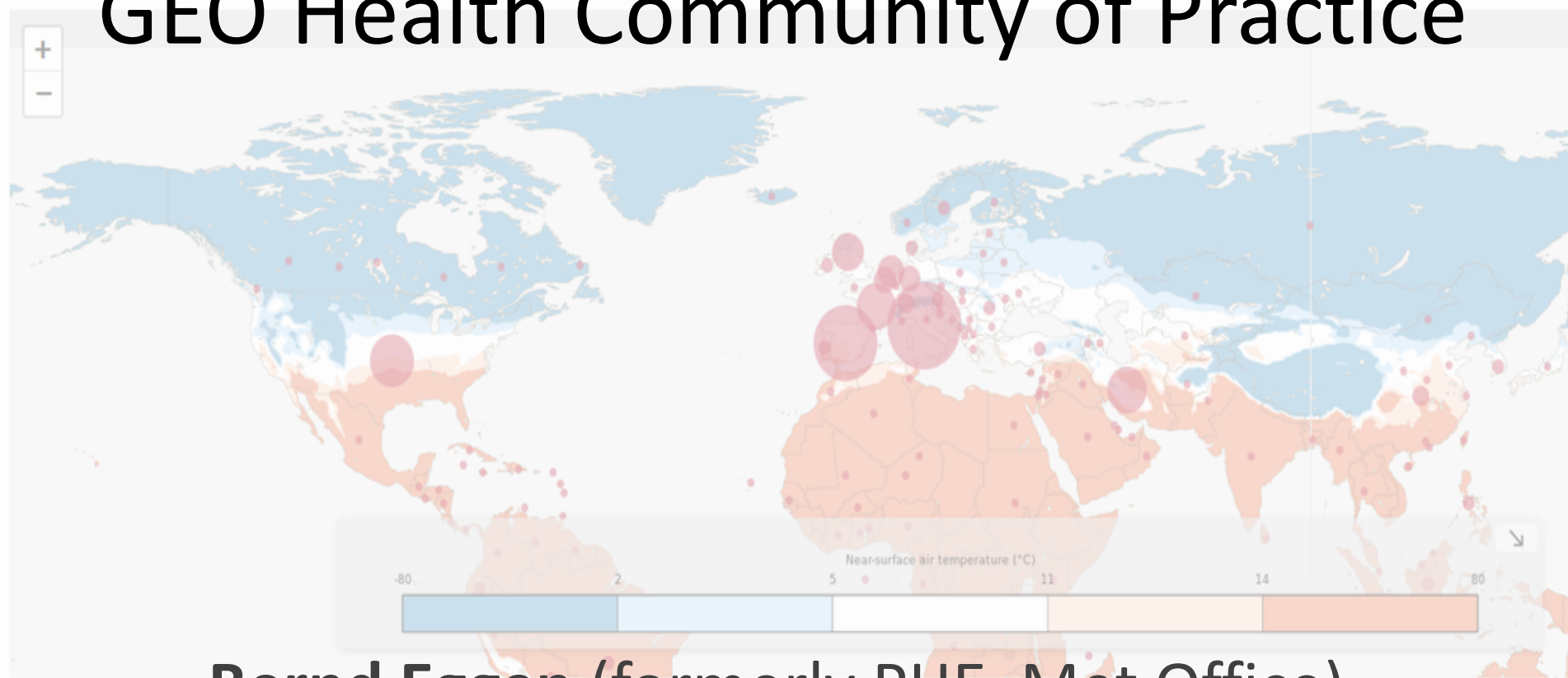


Recently published papers have suggested that, as happens with the diffusion of other viruses, air temperature and humidity could alter the spread of COVID-19. This application, provided by the Copernicus Climate Change Service, allows the user to explore some of these claims by plotting the average air temperature and humidity of the most recent months, alongside the mortality data obtained from Johns Hopkins University.

Month: March 2020

# GEO Health Community of Practice



**Bernd Eggen (formerly PHE, Met Office)**

**& Rachel Lowe (LSHTM)**

Click on a red circle to see the time evolution for that location. The white areas on the plots are regions where climate conditions are conducive to the community diffusion of the disease according to the scientific literature (Sajadi et al 2020, see documentation for details). Met hourly data on single levels and pressure levels and monthly averages for the past 20 years, are presented. Disclaimers:

- COVID-19 related data are provided by Johns Hopkins University Center for Systems Science and Engineering (JHU CSSE), and are available at the following [GitHub repository](#). These are used in the application with
- The designations employed and the presentation of material on the map do not imply the expression of any opinion whatsoever on the part of the European Union concerning the legal status of any country, territory or

Research / applications projects that your team / organisation is exploring related to COVID-19? Basic approaches used?

- **Copernicus\***, in particular these 3 services:
  - **C3S** (Climate Services);
  - **CAMS** (Atmospheric Services, pollutants);
  - **EMS** (Emergency Services).

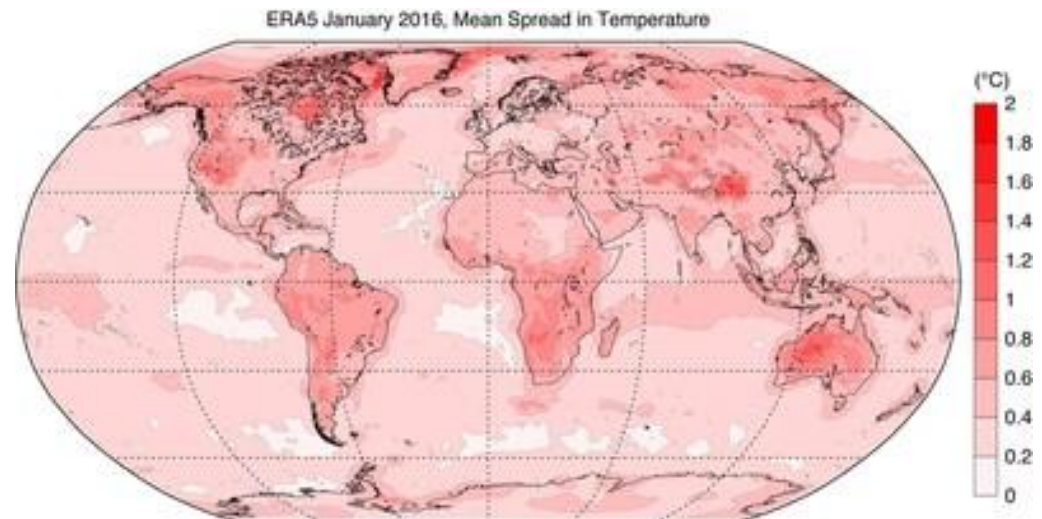


- Data & Apps from CDS (Climate Data Store), at [cds.climate.copernicus.eu](https://cds.climate.copernicus.eu) eg ERA5, CMIP5;

and [.../#!/software/app-c3s-monthly-climate-covid-19-explorer?tab=app](https://cds.climate.copernicus.eu/software/app-c3s-monthly-climate-covid-19-explorer?tab=app) **COVID-19 app**

What are the expected results, and how do you plan to use these results in real-time applications?

- ERA5 data set available with max 5 day delay, using it to feed meteorological data into a transmission model accounting for confounding factors, such as connectivity, demographic factors and population density;
- Testing some key meteorological variables:
  - Temperature
  - Humidity
  - UV
  - Air Pollutants



What Earth observations are you **using**, and what other Earth observation data or products do you **need**?

## **Using:**

- Fair amount of EO data on C3S, CAMS & EMS;
- Mainly using ERA5 (& ERA5T) (sub-)daily data;

## **Need:**

- Downscaled ERA5 and (sub-)seasonal data sets at high spatio-temporal resolution;
- In-situ measurements of pollutants and UV.