

FINDINGS REPORT #4-2020

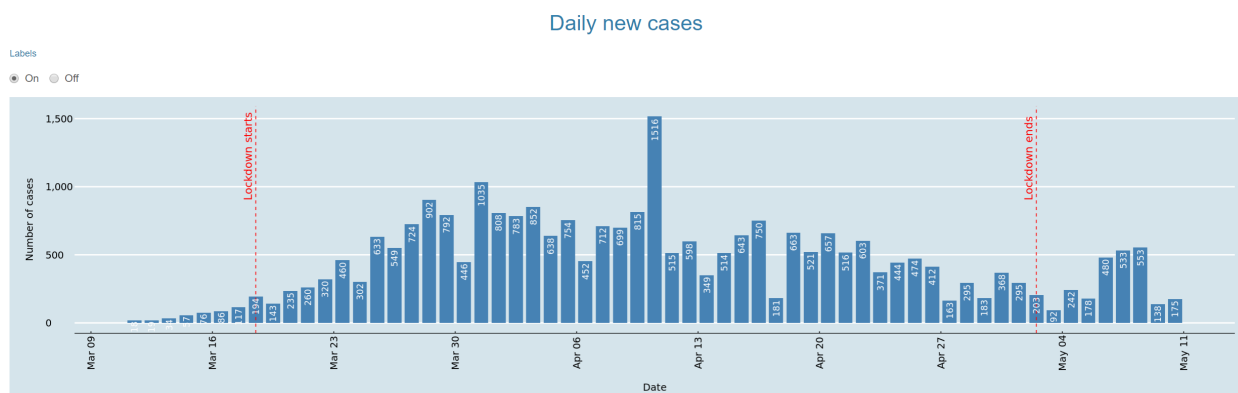
COVID-19 OBSERVATORY

REPORT SUMMARY

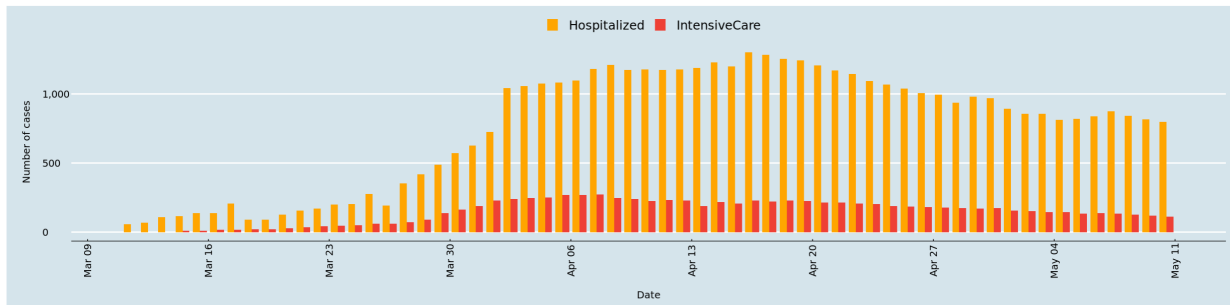
- Web app launch of COVID-19 daily statistics visualization and data exploration with emphasis on Portugal with the following components (app is evolving on a regular basis):
 - Daily digest of national cases and visualization of other factors (growth factor, mortality,...); overview of cases at regional level; compare Portugal with other countries
 - Explore the potential correlation of the spread of COVID-19 with temperature
 - Explore the potential relation of people mobility in different dimensions (housing, grocery stores,...) with spread of COVID-19
- COVID-19 AIR Centre web App is accessible here: <https://aircentre.io/app/covid/>

DAILY DIGEST, REGIONAL AND INTERNATIONAL DATA

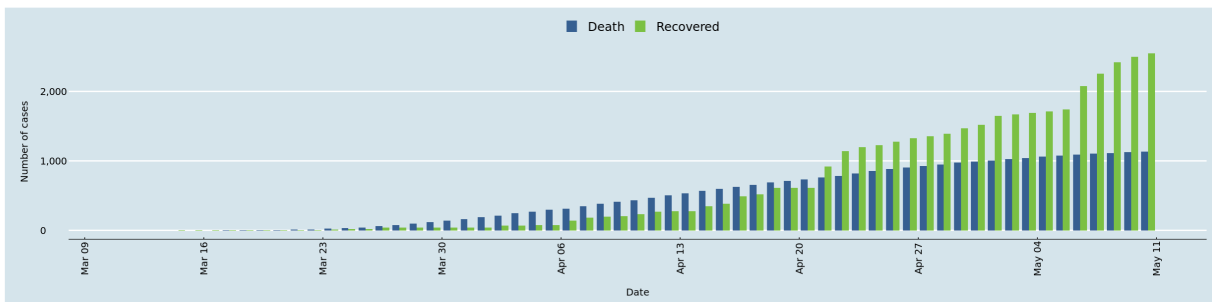
Discover and visualize COVID-19 daily published data at national Portuguese level such as daily new cases, hospitalized, and number of recovered people. Labels are used to indicate key points in time. Number of cases at regional level are also shown. Morbidities at international EU level are shown. Examples are given in the following figures.



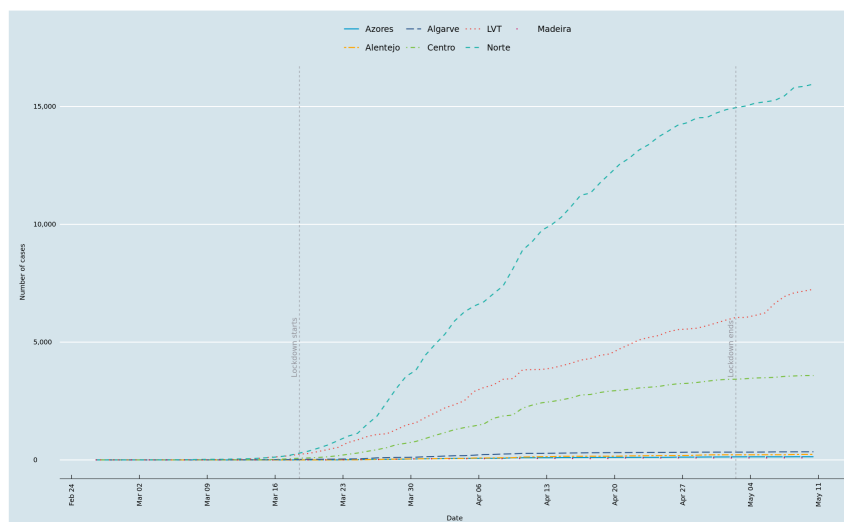
Daily hospitalized and in intensive care unit



Cumulative deaths and recovered

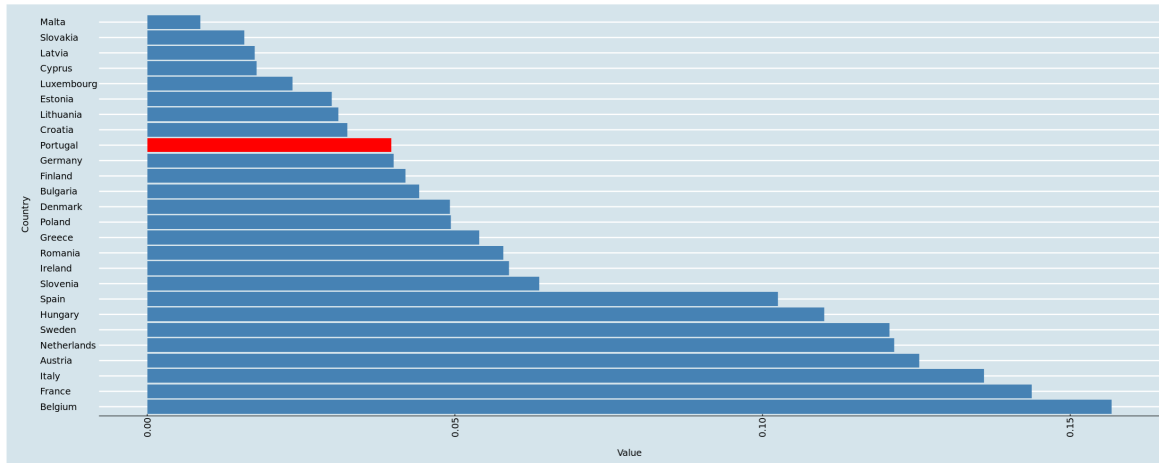


Confirmed cases



Confirmed - Daily total number of individuals with confirmed positive COVID-19 diagnosis.

COVID-19 Mortality by country



COVID-19 Mortality: Deaths / confirmed cases

Only countries with reported deaths and confirmed cases are shown

Figure: 1 a) to e) Evolution in time of : Daily new cases; Daily Hospitalized and in intensive care unit, Cumulative deaths and recovered, Confirmed cases at national level; COVID-19 mortality by country

AIR TEMPERATURE RELATION WITH COVID-19 SPREAD

Recent studies suggest that temperature and humidity can play a role in COVID-19 spreading. This is justified by the fact that possibly, like other viruses, COVID-19 outbreak can have seasonal cycles which in turn are influenced by several factors, including temperature and humidity. In that sense, Copernicus Climate Change Service (C3S*) has developed an application that maps mortalities against temperature and humidity data from the past, present and future.

AIR Centre COVID-19 Observatory is following this study and created a correlation map between air temperature and the growth rate of COVID-19 cases in Portugal. So far, no correlation has been observed. However, the site is periodically updated with latest data and plans to include other variables and significance tests.

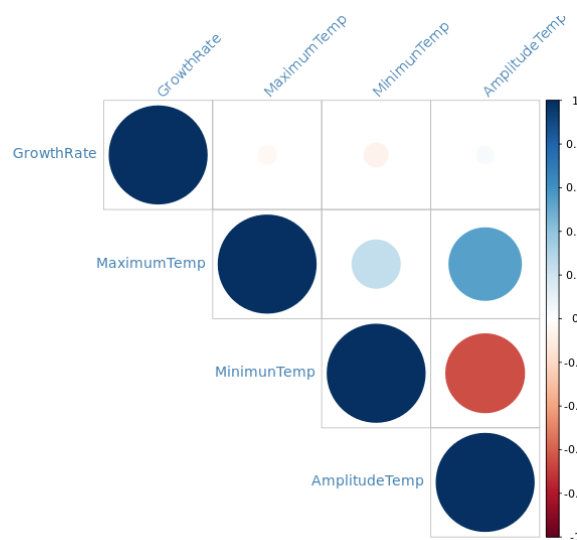


Figure: 2 Correlogram between temperature and growth factor, 29-5-2020

Reading the Correlogram

- Circles represent the association between the variables names at the end of each line.
- Positive correlations are displayed in blue and negative correlations in red color.
- Color intensity and the size of the circle are proportional to the correlation coefficients.
- If it occurs, a correlation between growth factor and temperature shall show un in the first rows.



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MOBILITY RELATION WITH COVID-19 SPREAD

Scientists have hypothesized that mobility may play a role in the spread of COVID-19. Lockdown and other mobility restriction policies were based on that hypothesis. We are exploring that association in Portugal.

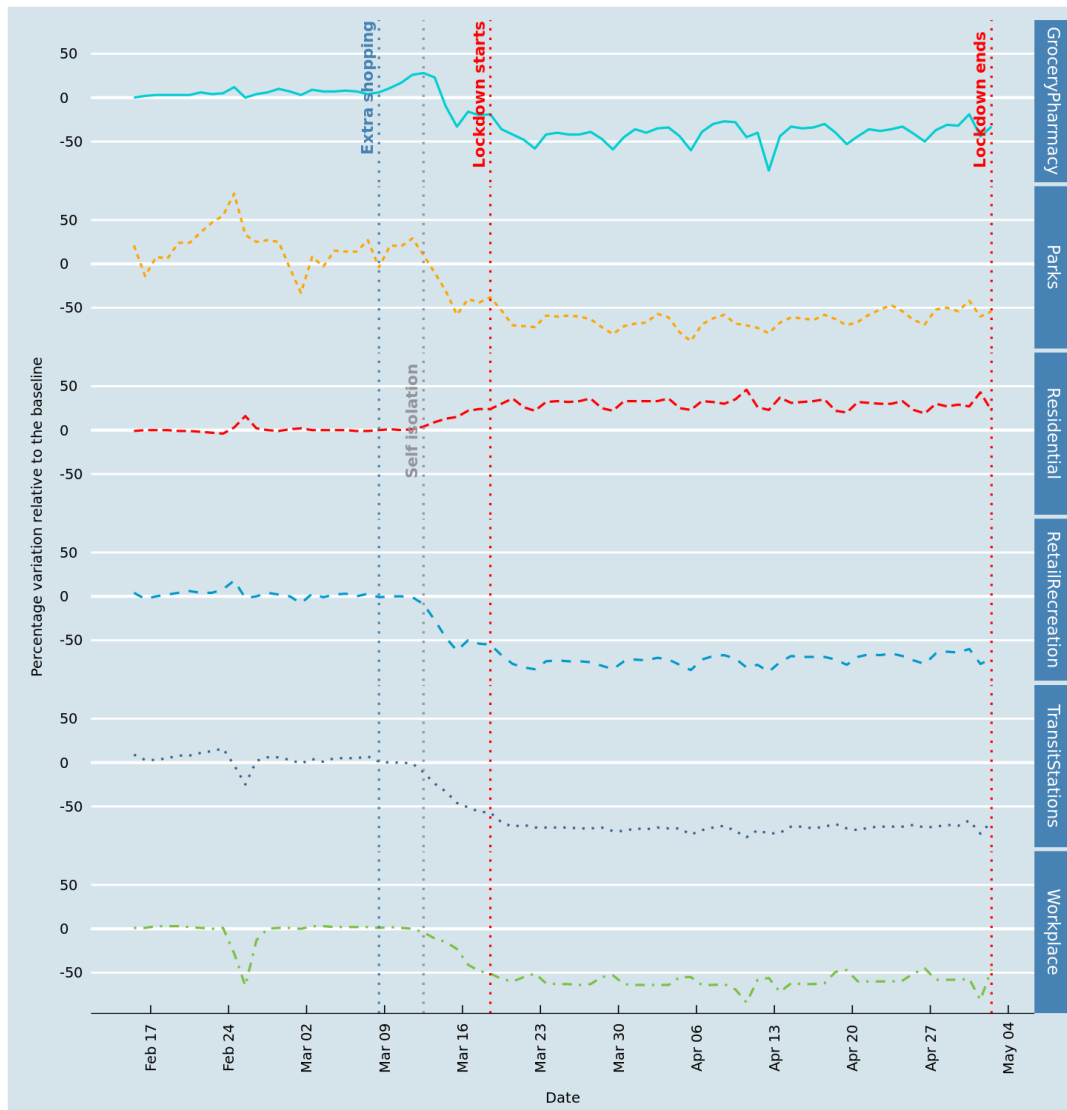


Figure: 3 Correlogram between temperature and growth factor, 29-5-2020



AIR CENTRE

The Atlantic International Research (AIR) Centre is an international networked institution, based on Terceira Island, Azores, aimed at promoting job creation and sustainable economic development in the Atlantic regions, through the integration of space science, climate, land, ocean, energy and data. The AIR Centre promotes South-North / North-South cooperation in line with the national / regional priorities of the Atlantic countries and global challenges, such as the United Nations 2030 Agenda for Sustainable Development, the Decade of Science of the Ocean, the Paris Agreement and the Sendai Framework for Disaster Risk Reduction 2015-2030.

AIR CENTRE - ATLANTIC INTERNATIONAL RESEARCH CENTRE

Headquarters: Rua Gervásio Lima, SN, 9760 – 472, Praia da Vitória, Açores - Portugal.

Lisbon Office: Palácio das Laranjeiras. Estrada das Laranjeiras, 205 1649-018 Lisboa- Portugal

Telephone: +351 21 723 10 62

Email: info@aircentre.org

ESA LAB@Açores Director: Pedro Freire da Silva

EO Lab Team: Márcia Gonçalves, Mariana Ávila, Rui Martins, João Pinelo

Generated using Direção-geral de Saúde through DSSG <https://github.com/dssg-pt/covid19pt-data/blob/master/data.csv>

Generated using COVID-19 Data Hub (<https://covid19datahub.io>)

Generated using Google Data <https://www.google.com/covid19/mobility/index.html>

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