

Package ‘mdyn’

April 11, 2020

Type Package

Title Scripts to analyse mobile data and model population dynamics

Version 0.1.0

Author Diego Marcondes

Maintainer Diego Marcondes <dmarcondes@ime.usp.br>

Description This package contains scripts to visualize and statistically analyse the outputs of python mdyn code available at <<https://github.com/pedrospeixoto/mdyn>>. The scripts focus on visualizing data about the COVID-19 spread in Brazil and has functions to plot crucial information about the disease daily.

URL <http://github.com/dmarcondes/localift>

BugReports <https://github.com/dmarcondes/localift/issues>

Imports ggplot2 (>= 3.3.0),
tidyr (>= 1.0.0)

Depends R (>= 3.6)

License GPL-3

Encoding UTF-8

LazyData true

RoxygenNote 7.0.2

R topics documented:

plotRisk_cases	2
risk	3
Index	4

plotRisk_cases

Plot Infected x Risk of Infection

Description

Build various plots combining the number of infected by COVID-19 in a city of a state in Brazil and the risk of infection estimated by Peixoto et. al. (2020).

Usage

```
plotRisk_cases(
  states = "all",
  day = "today",
  day.init = NULL,
  day.final = NULL,
  cities = "populated",
  pos_name = "pop"
)
```

Arguments

states	A vector with the states to build plots for. It should contain the two letters representing the name of the states. To plot all available states enter "all", which is default.
day	The date which to plot data from. The default is today. Must be represented as YYYY-MM-DD.
day.init	To build a sequence of plots to an interval of days. Should represent the initial day of the range. This surpasses the <i>day</i> argument.
day.final	The final day of the range.
cities	Which cities to plot information for. It should either be "populated" for cities with the greatest populations or a named list with the city names. The names must be the two letters representing the states. The city names must be written as they are in the <i>risk</i> dataset.
pos_name	A string to put at the end of the saved plots. If you want to run with distinct cities for a same day, use this string to not overwrite the plots.

Details

This function download data from <<https://brasil.io/dataset/covid19/caso?>> about the number of confirmed infected individuals, and confirmed deaths, by COVID-19 in each city of Brazil and build plots comparing these quantities with the risk of infection of each city estimated by Peixoto et. al. (2020). It may consider data for a given day or a range of days during the pandemic.

Value

A list with all the generated plots, which were also saved on pdf files in high resolution

References

Peixoto, et. al. Modeling future spread of infections via mobile geolocation data and population dynamics. An application to COVID-19 in Brazil. 2020. Available at <<https://www.ime.usp.br/~pedrosp/covid-19/>>.

risk	<i>Estimated risk</i>
------	-----------------------

Description

List containing the risk of infection by COVID-19 estimated to each city of each available state of Brazil by Peixoto et. al. (2020).

Usage

```
risk
```

Format

An object of class `list` of length 2.

Details

Data of each state is named in the list by the two letters in lowercase which represent their name.

Value

State	The name of the state.
City	The performance in Calculus II.
sXXX	The rank infection estimated for each intensity of movement s . See Peixoto et. al. (2020) for more details.
risk_lesser	Risk calculated considering only the values of s lesser than one.
risk_greater	Risk calculated considering only the values of s greater or equal to one.
risk	Risk calculated considering all values of s .

References

Peixoto, et. al. Modeling future spread of infections via mobile geolocation data and population dynamics. An application to COVID-19 in Brazil. 2020. Available at <<https://www.ime.usp.br/~pedrosp/covid-19/>>.

Index

*Topic **datasets**

risk, [3](#)

plotRisk_cases, [2](#)

risk, [3](#)