Trajectory Mapping Results

Analysis Europe10d

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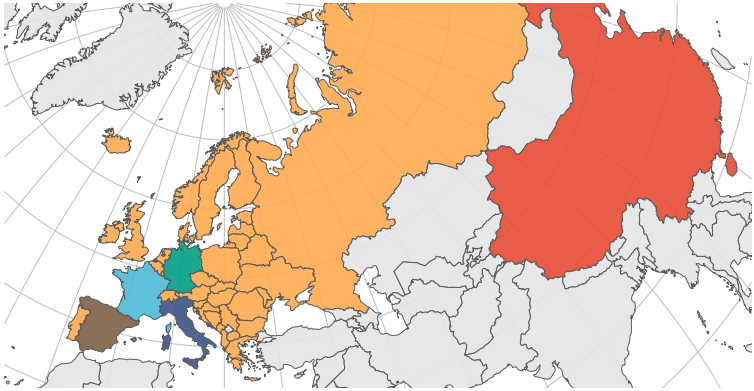
Deme configuration



deme	division	country	region	exclude_country	min_date	max_date
China		China	Asia		2019-12-24	2020-01-23
France		France	Europe		2020-01-23	2020-03-08
Germany		Germany	Europe		2020-01-28	2020-03-08
Italy		Italy	Europe		2020-01-29	2020-03-08
OtherEuropean			Europe	France,Germany,Italy,Spain	2020-01-29	2020-03-08
Spain		Spain	Europe		2020-02-24	2020-03-08

Table 2: Total number of cases reported to ECDC 18th March

deme	cumvalue	pop	ECDCcas100
China	80768	1439323.8	5.6
France	613	65273.5	0.9
Germany	684	83783.9	0.8
Italy	4636	60461.8	7.7
OtherEuropean	1561	491362.0	0.3
Spain	764	46754.8	1.6

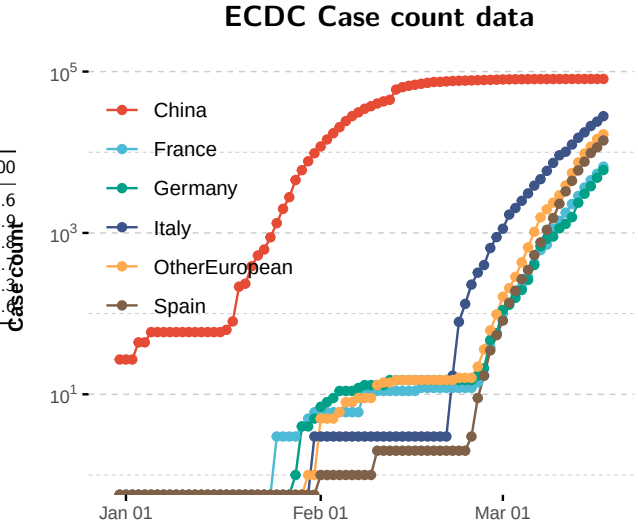


Figure 1: ECDC case counts for each deme from the beginning of the pandemic to March 18

Epidemic trajectory data

From the Stochastic Trajectory Mapping analysis, we obtain one epidemic trajectory per set of parameters + typed node tree.

The processing of the trajectory data includes the generation of two different datasets:

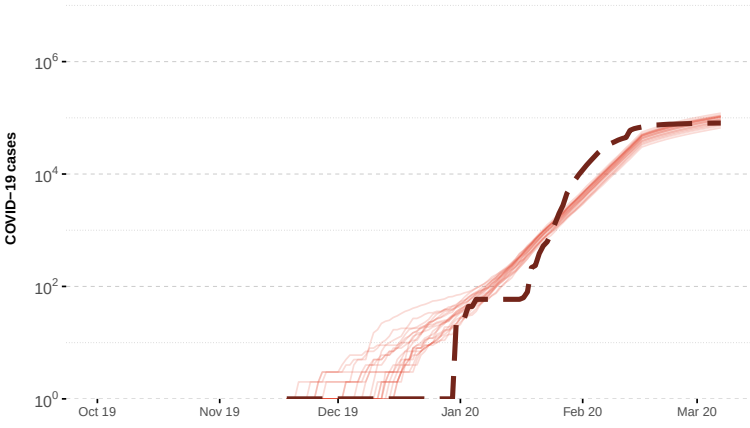
- `states`: We have the total number of inferred cases by trajectory, deme and time.
- `events`: We have each event that happened in a epidemic trajectory, with its type (origin, birth, death or migration), the source/destination deme and time.

Epidemic trajectory data

To have a feasible time of analysis of the epidemic trajectories we take a random subsample of 500 trajectories.

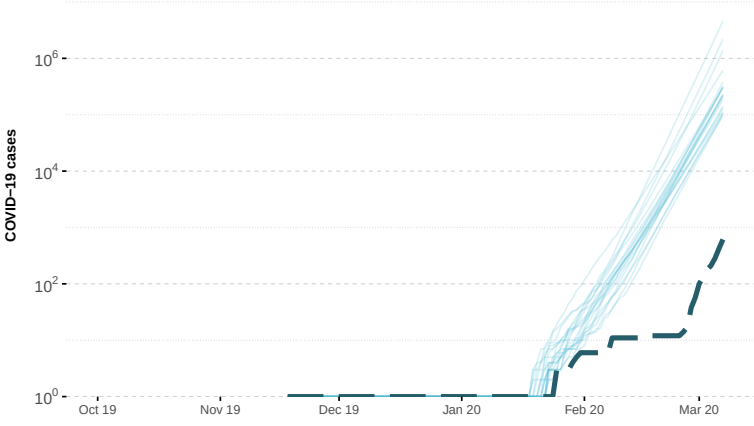
To facilitate visualization and summarise the results, we take a grid time of 1 day and summarise the number of events that day as the sum of the events in the corresponding time interval; and the number of inferred cases as the maximum of the interval.

Inferred case counts - China



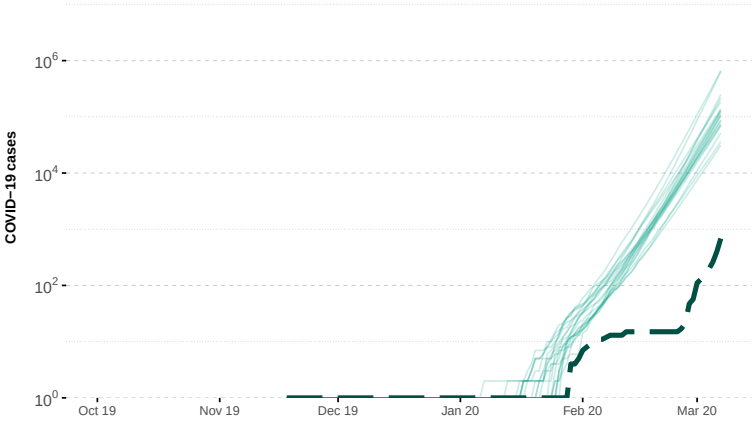
Imean	113408.1
Imedian	74524
Ilow	21174.65
Ihigh	463218.6
value	43
cumvalue	81063
pop	1439324
ECDCcas100	5.63
fc	1.09
lfc	0.17
hfc	3.83
rc	0.92
lrc	0.26
hrc	5.71
mcas100	5.18

Inferred case counts - France



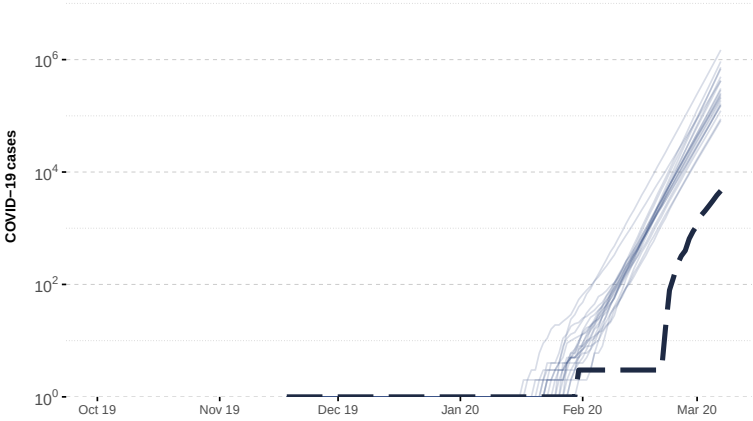
lmean	26012.6
lmedian	26962.5
llow	18839.4
lhigh	32019
value	1210
cumvalue	6633
pop	65273.51
ECDCcas100	10.16
fc	0.25
lfc	0.21
hfc	0.35
rc	4.06
lrc	2.84
hrc	4.83
mcas100	41.31

Inferred case counts - Germany



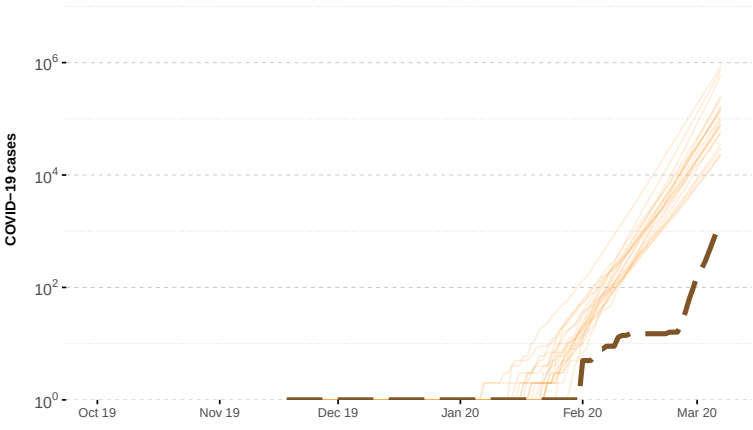
Imean	428016.2
Imedian	154253.5
Ilow	66674.6
Ihigh	2485772
value	1174
cumvalue	6012
pop	83783.95
ECDCcas100	7.18
fc	0.04
lfc	0
hfc	0.09
rc	25.66
lrc	11.09
hrc	413.47
mcas100	184.11

Inferred case counts - Italy



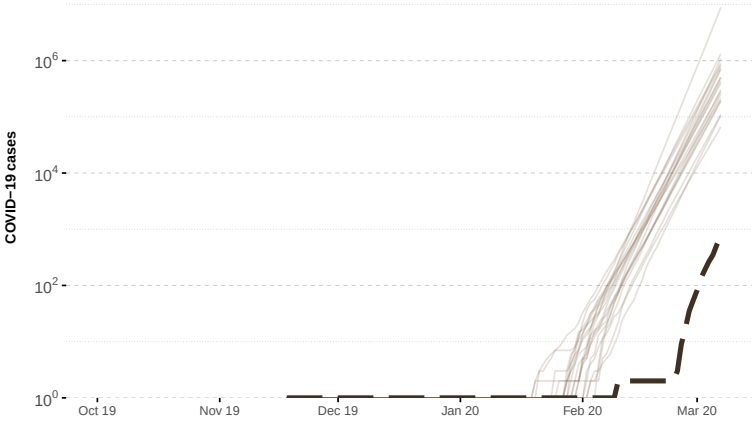
lmean	272290.2
lmedian	173312.5
llow	58654.8
lhigh	878321.2
value	4000
cumvalue	27980
pop	60461.83
ECDCcas100	46.28
fc	0.16
lfc	0.03
hfc	0.48
rc	6.19
lrc	2.1
hrc	31.39
mcas100	286.65

Inferred case counts - OtherEuropean



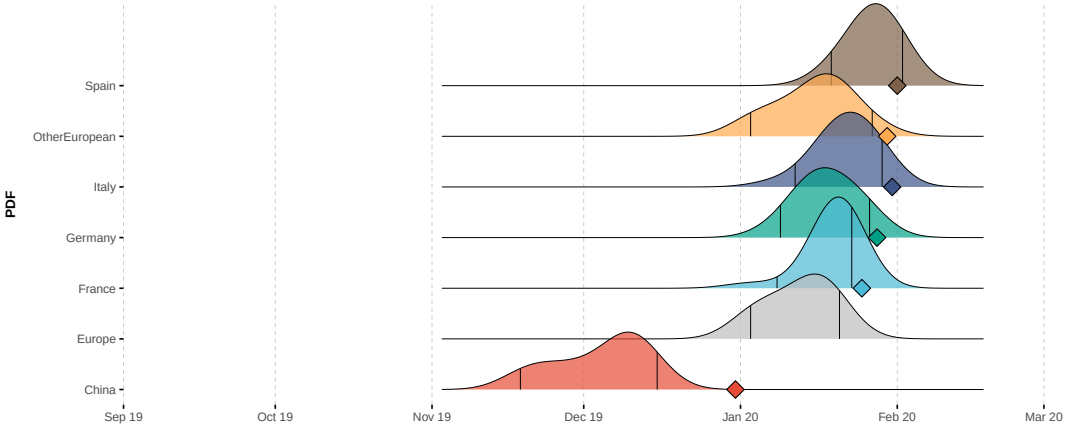
lmean	136335.2
lmedian	69217
llow	14530.88
lhigh	563168.5
value	2110
cumvalue	16685
pop	491362
ECDCcas100	3.4
fc	0.24
lfc	0.03
hfc	1.15
rc	4.15
lrc	0.87
hrc	33.75
mcas100	14.09

Inferred case counts - Spain



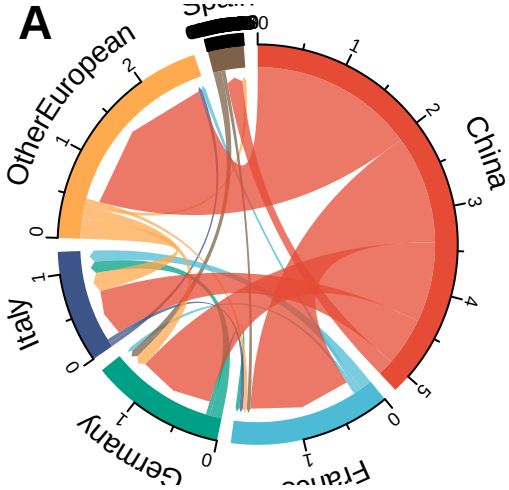
lmean	660574.8
lmedian	294264.5
llow	59204.15
lhigh	3967556
value	2503
cumvalue	13994
pop	46754.78
ECDCcas100	29.93
fc	0.05
lfc	0
hfc	0.24
rc	21.03
lrc	4.23
hrc	283.52
mcas100	629.38

First introduction



Migrations - Period 1

```
## NULL
```



Migrations - Period 2

```
## NULL
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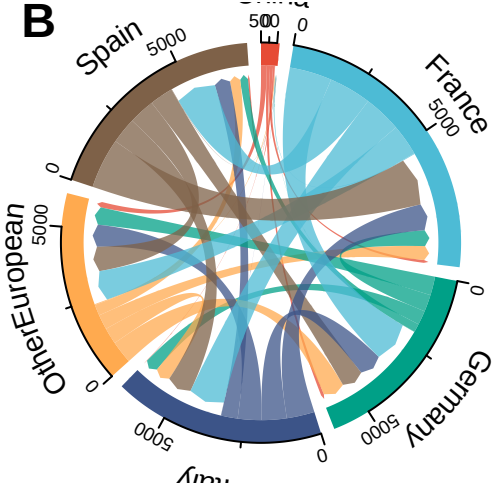
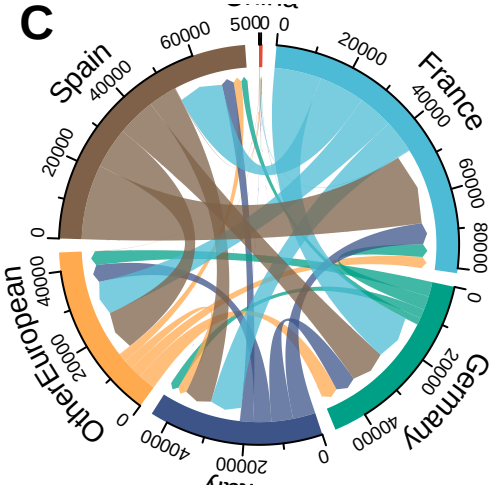


Migrations - Period 3

```
## NULL
```