Coronavirus Analysis

March 14, 2020

Analysis of recent coronavirus data for different countries and regions.
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More info in https://github.com/jmoldon/coronavirus_analysis

1 General statistics

Data comes from Johns Hopkins University at https://github.com/CSSEGISandData/COVID-19 that is updated daily.

1.1 List of most affected countries (sorted by number of confirmed cases)

Country/Region	Confirmed	Deaths	Recovered
China	67786	3062	51553
Italy	17660	1266	1439
Iran	11364	514	2959
Korea, South	7979	66	510
Spain	5232	133	193
Germany	3675	7	46
France	3661	79	12
Switzerland	1139	11	4
Norway	996	0	1
Sweden	814	1	1
Netherlands	804	10	0
Denmark	801	0	1
Cruise Ship	706	7	325
Japan	701	19	118
US	568	37	6

1.2 List of most affected countries/provinces (sorted by number of deaths)

Country/Region	Province/State	Confirmed	Deaths	Recovered
China	Hubei	67786	3062	51553
Italy		17660	1266	1439
Iran		11364	514	2959
Spain		5232	133	193
France	France	3661	79	12
Korea, South		7979	66	510
US	Washington	568	37	1
China	Henan	1273	22	1249
Japan		701	19	118
US	King County, WA	83	17	1
China	Heilongjiang	482	13	446
Switzerland		1139	11	4
Netherlands		804	10	0
Iraq		101	9	24
China	Guangdong	1356	8	1296

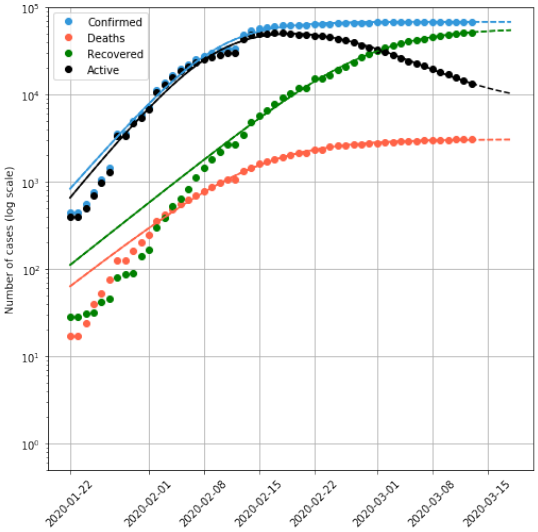
2 Evolution of cases (Confirmed, Deaths, Active and Recovery) per country

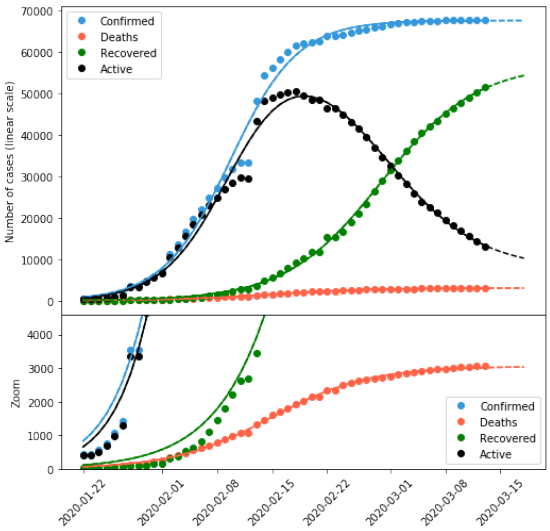
All plots have the same information. Left: log scale, right: linear scale. Bottom-right: is a zoom to show the correct scale for deaths. The straight line is a fit to a logistic growth when possible. If the fit does not converge (low number of points in early stages) a simple exponential is used. The dashed line is a prediction based on the fit.

2.1 Early onset: China regions

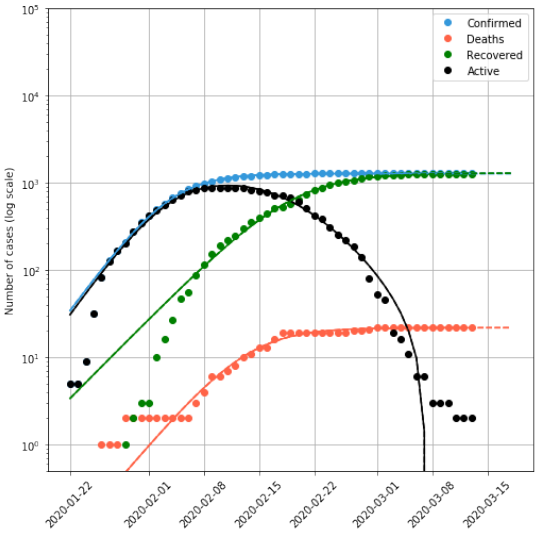
Most of the regions have almost completed the cycle and active cases are disappearing. Note that China Hubei (the original area) has a large number of confirmed cases (70000), but the other regions have very low number of cases, with number around 1200-500 or even less.

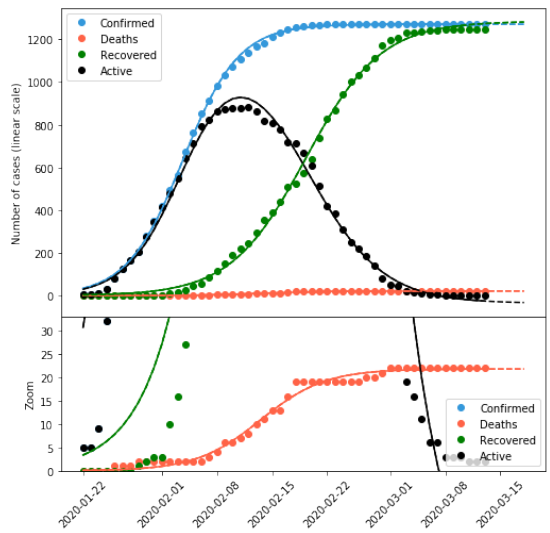
China Hubei
Date range: 2020-01-01 to 2021-03-12



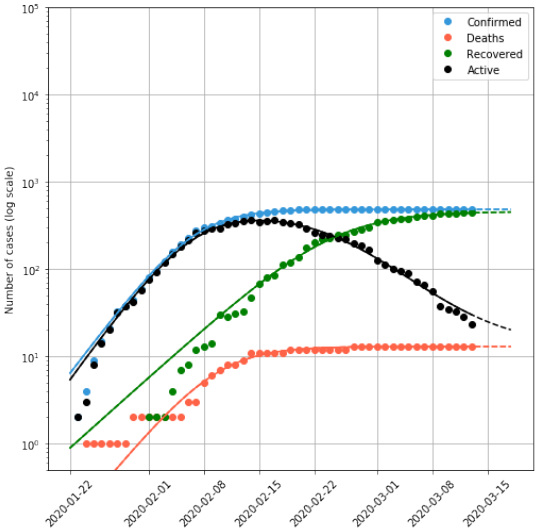


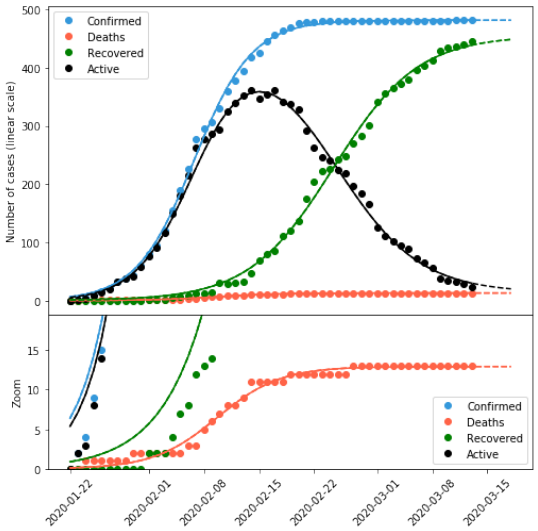
China Henan
Date range: 2020-01-01 to 2021-03-12



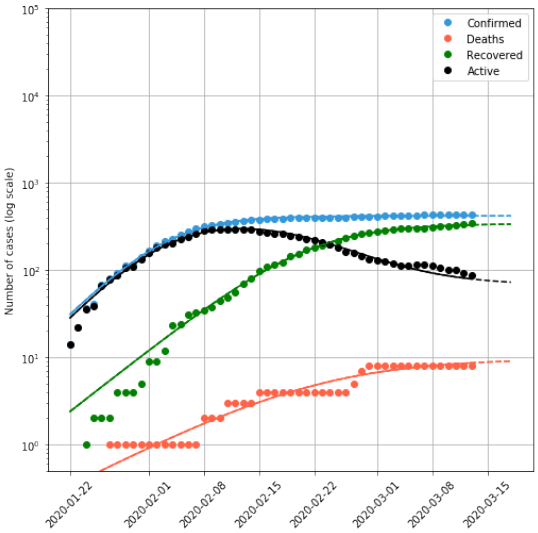


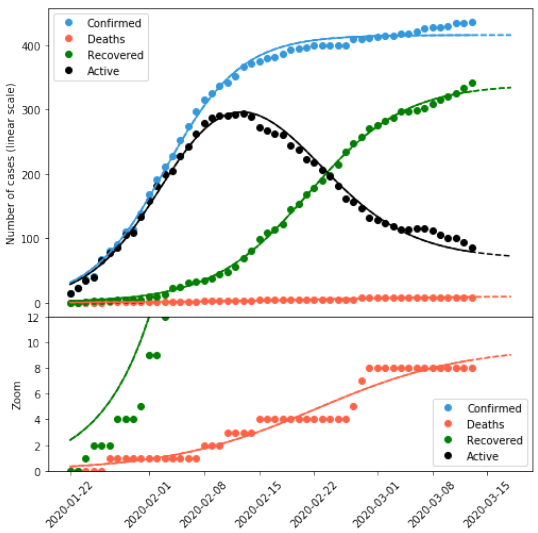
China Heilongjiang
Date range: 2020-01-01 to 2021-03-12

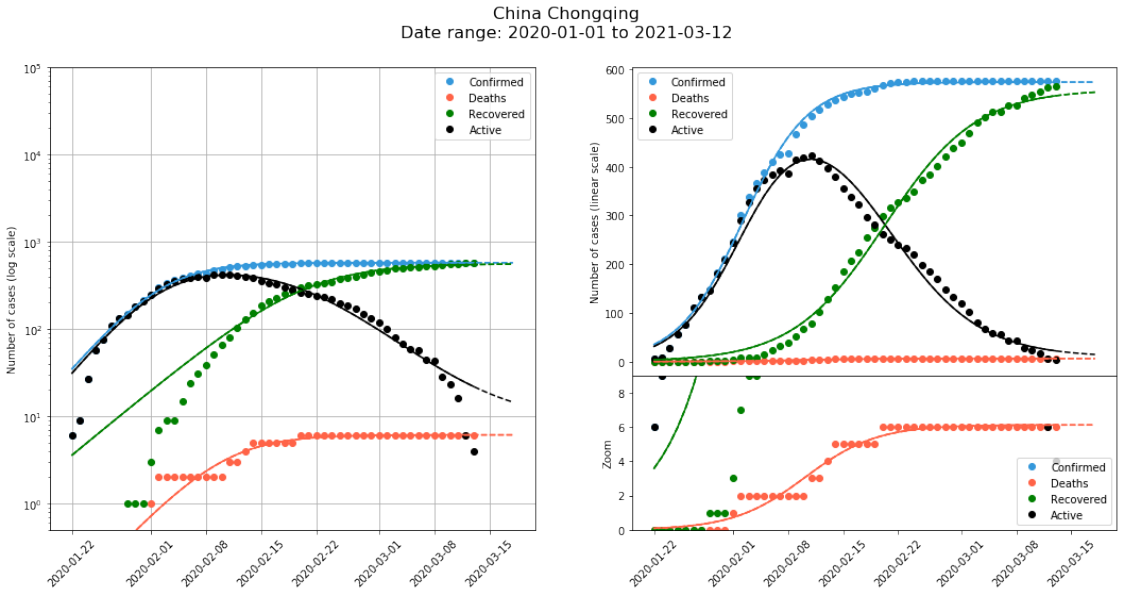




China Beijing
Date range: 2020-01-01 to 2021-03-12



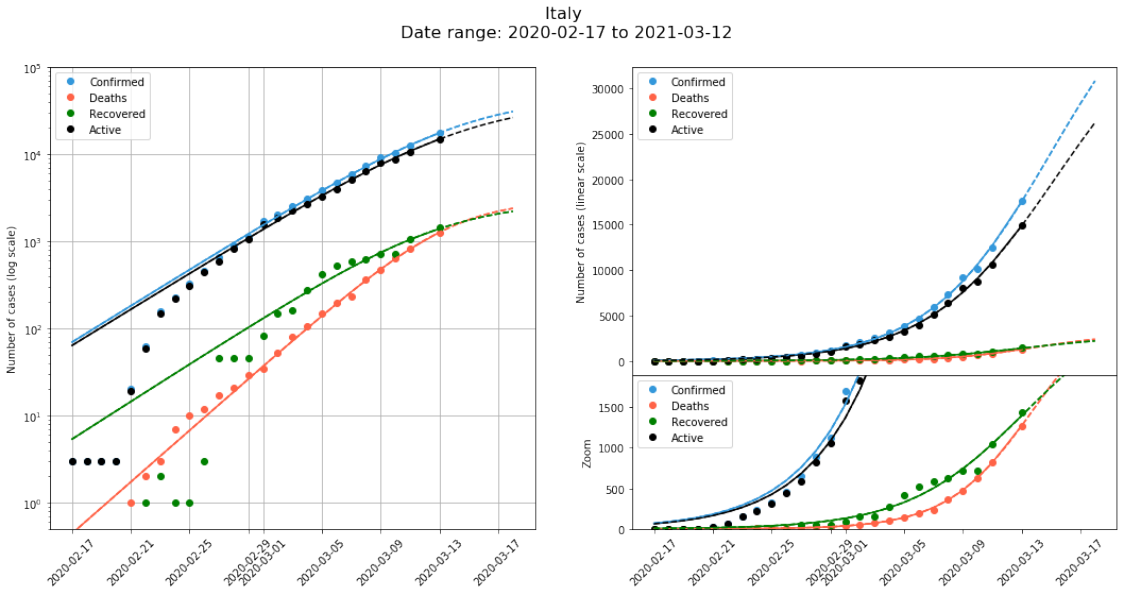




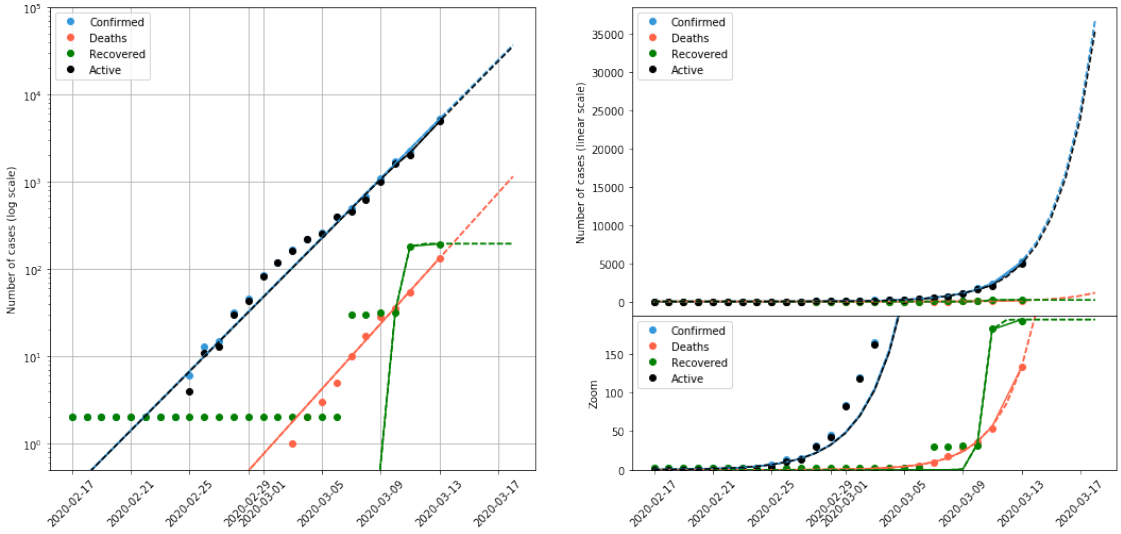
2.2 Europe

The number of confirmed cases and deaths is very high in countries like Italy, Spain and France. Note high rate of deaths, much higher than in , which is still in very exponential stage with no signs of flattening.

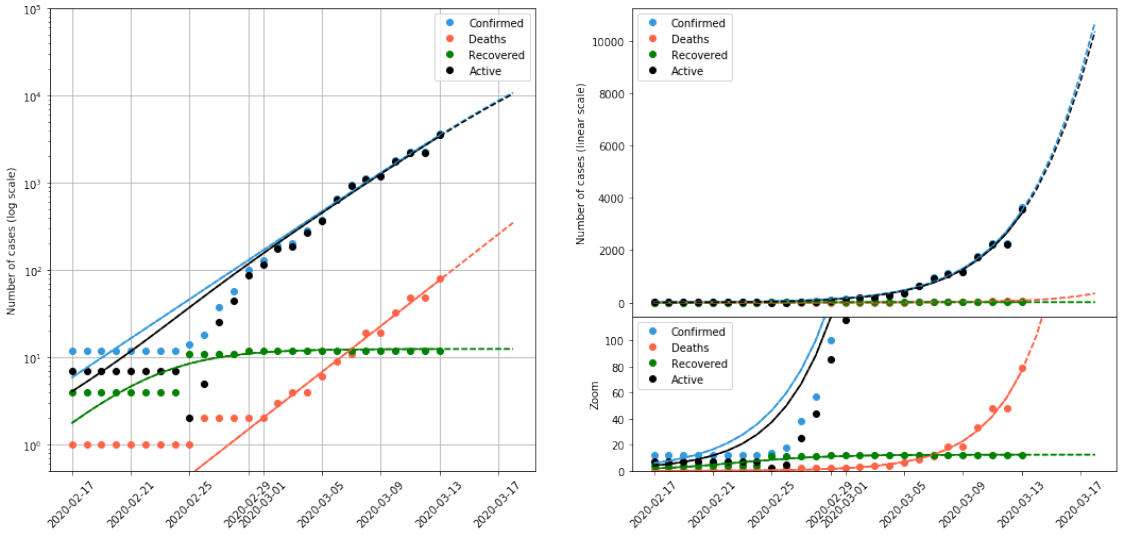
In general, more days will be needed for a more accurate fit and prediction, but we are still in a high-growth phase.



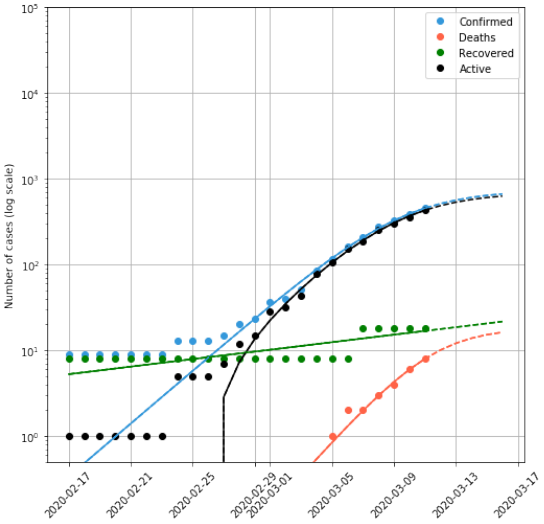
Spain
Date range: 2020-02-17 to 2021-03-12

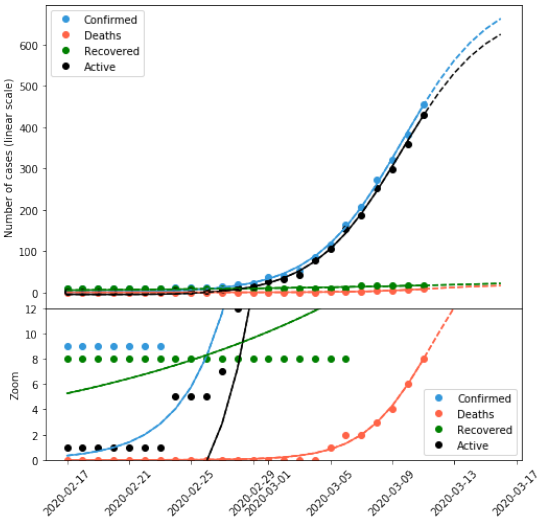


France France
Date range: 2020-02-17 to 2021-03-12

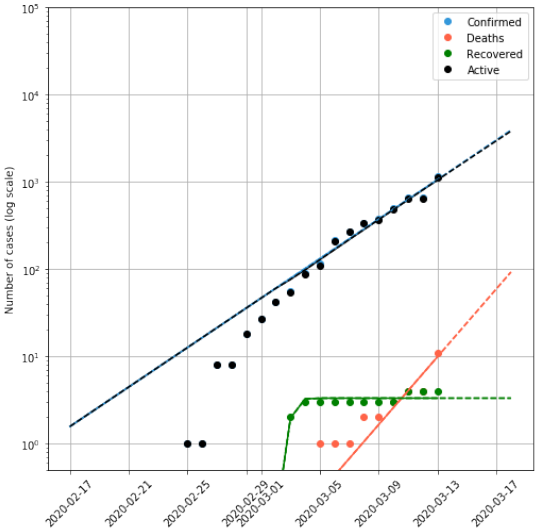


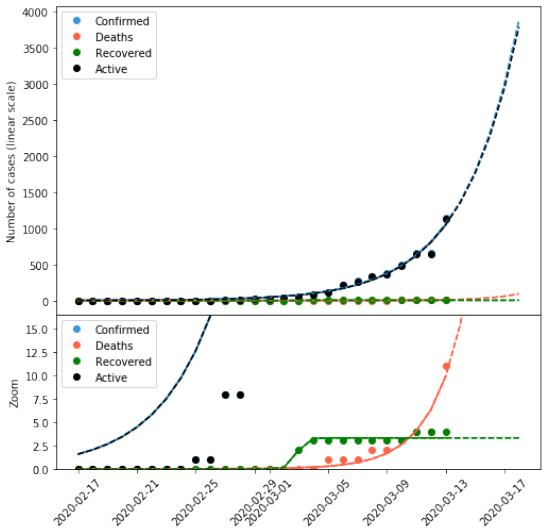
United Kingdom United Kingdom
Date range: 2020-02-17 to 2021-03-12

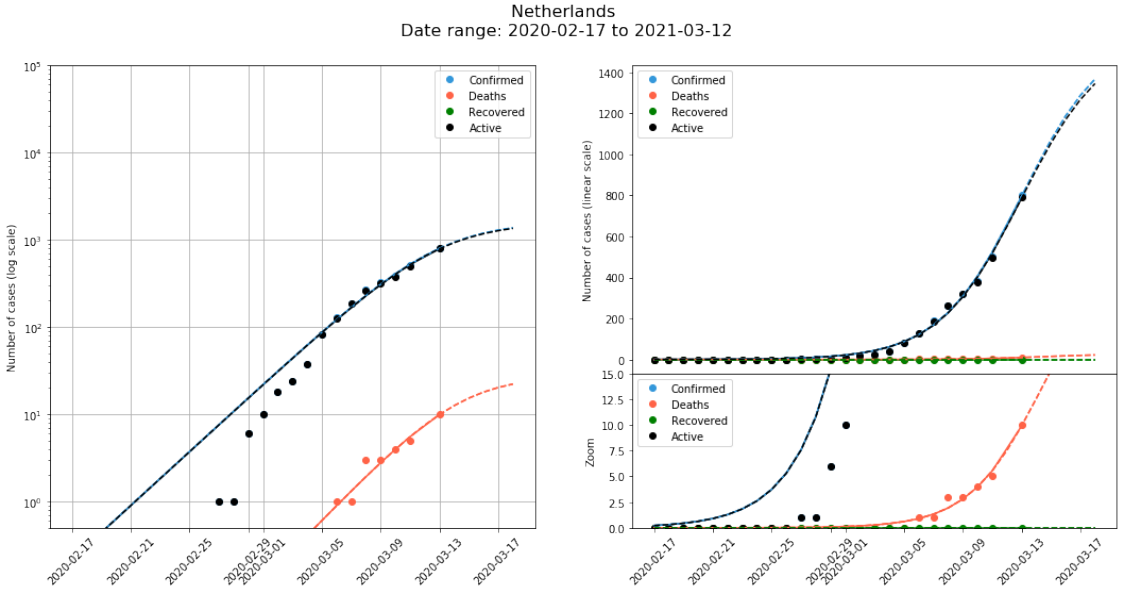




Switzerland
Date range: 2020-02-17 to 2021-03-12

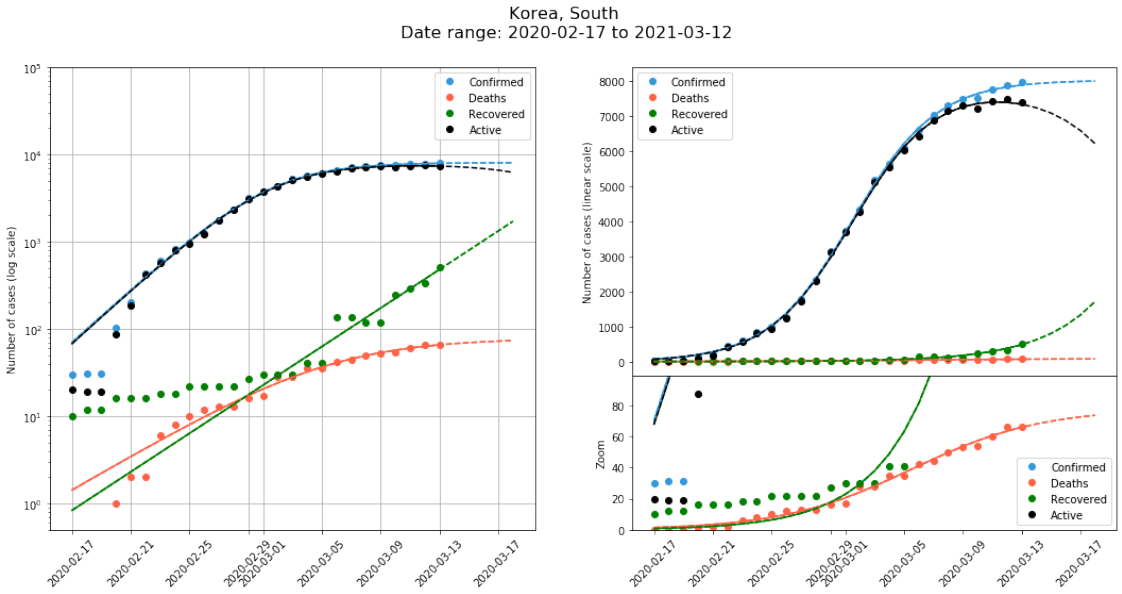


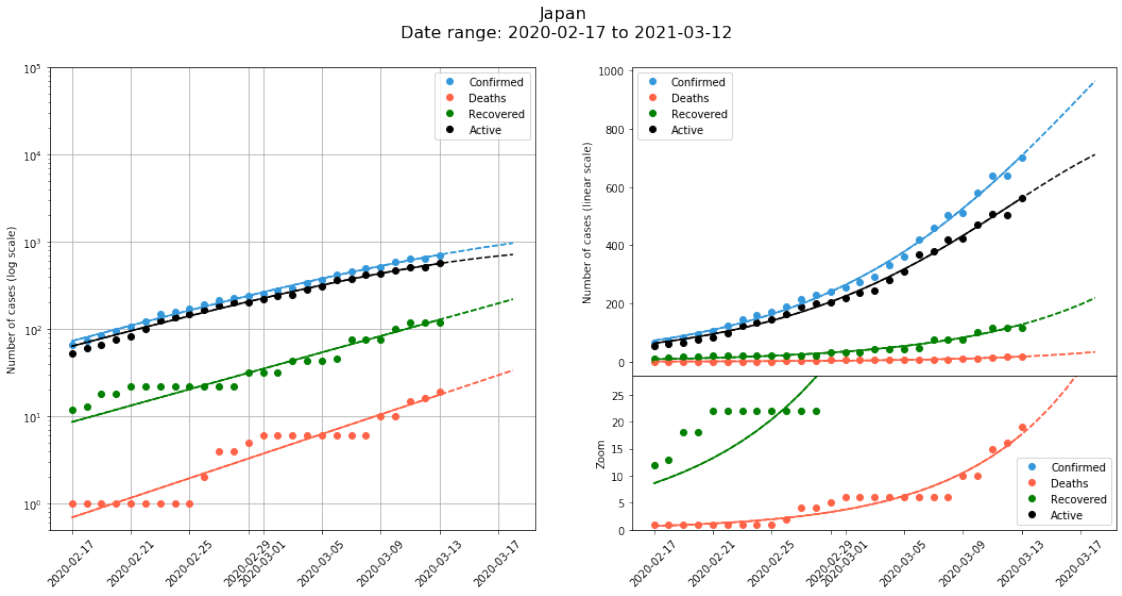


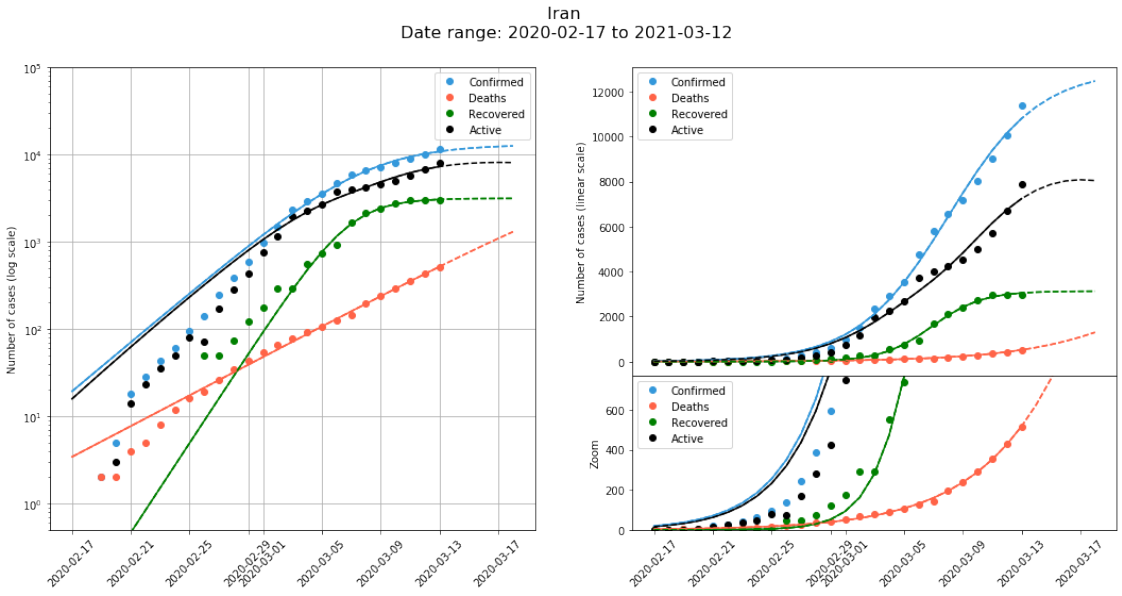


2.3 Other countries in Asia

South Korea has a remarkable recovery rate, with many cases and a reduced number of deaths. Japan growth is moderate, much smaller than in European countries. Iran is showing hints of flattening, although it is curious that the number of recoveries has significantly slowed down while the number of deaths still follow a very exponential trend.



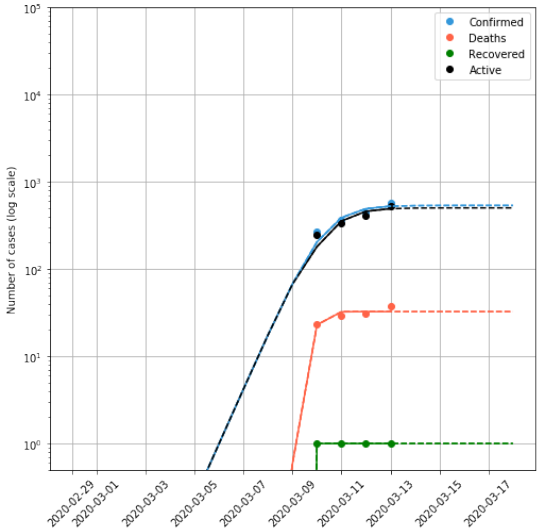


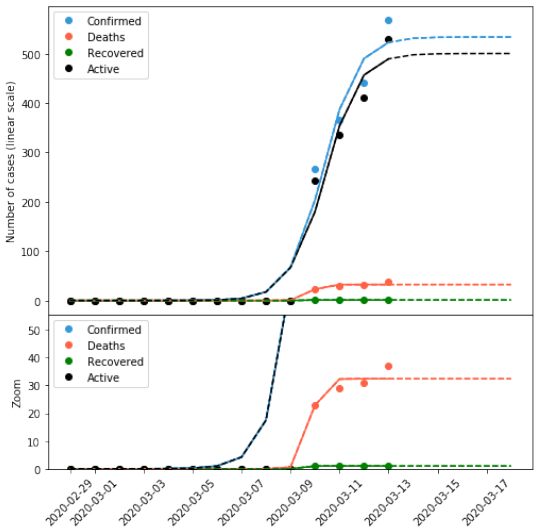


3 United States

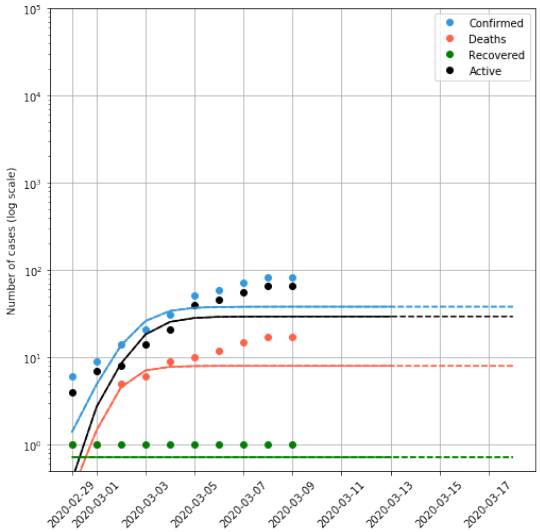
The number of days with cases is still very low, and the fits are not very informative.

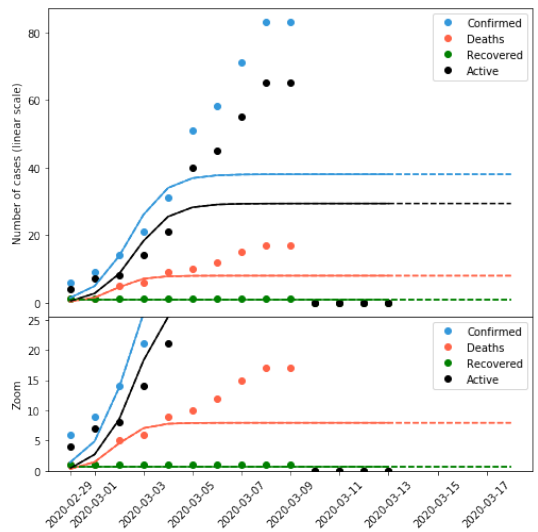
US Washington
Date range: 2020-02-29 to 2021-03-12

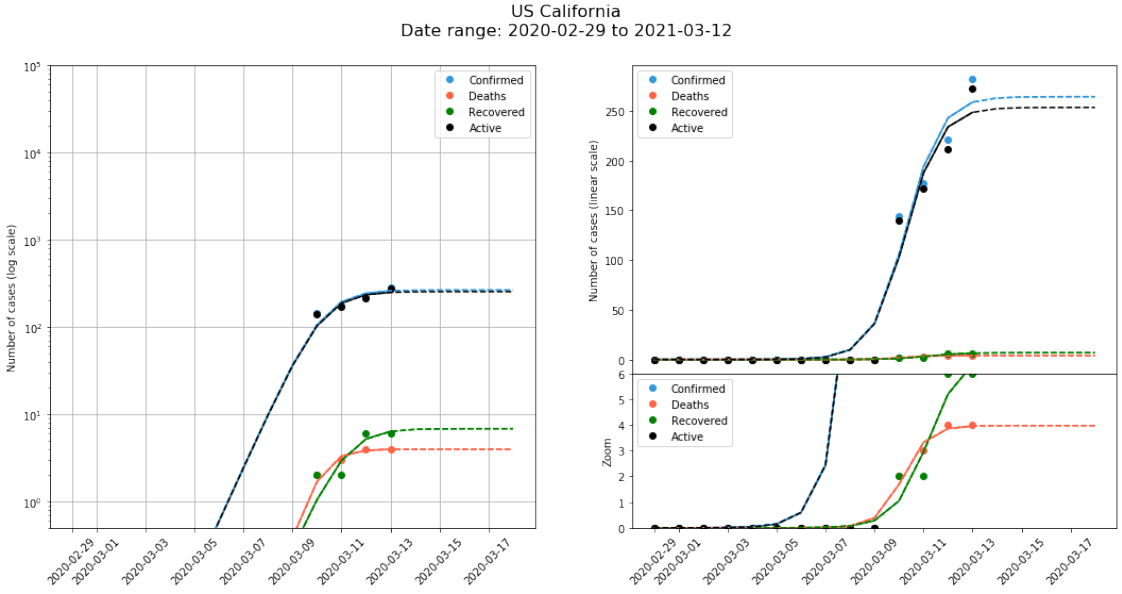




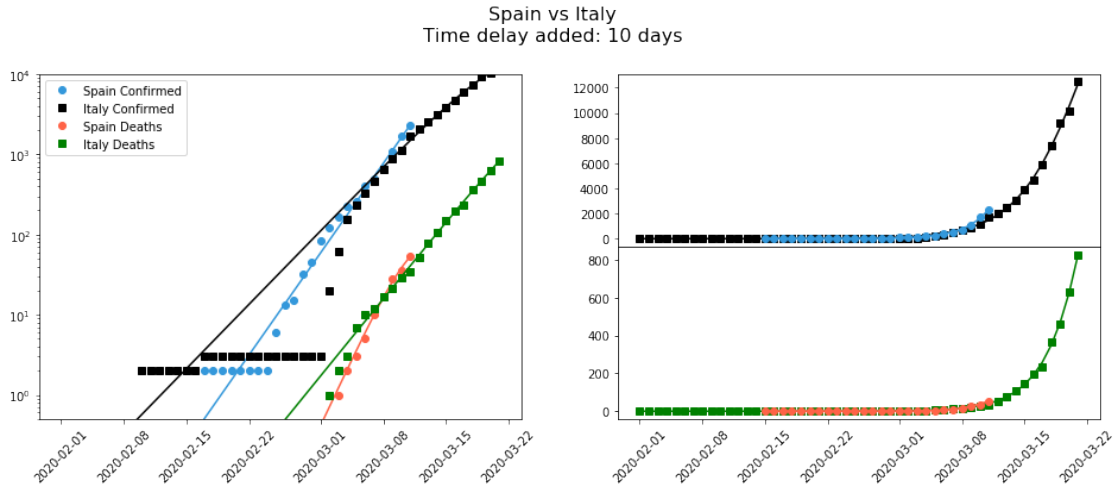
US King County, WA
Date range: 2020-02-29 to 2021-03-12



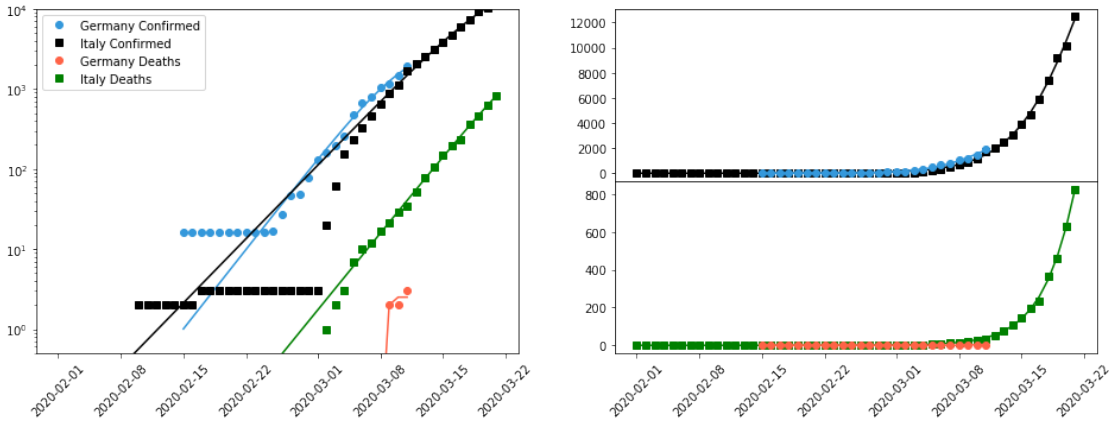




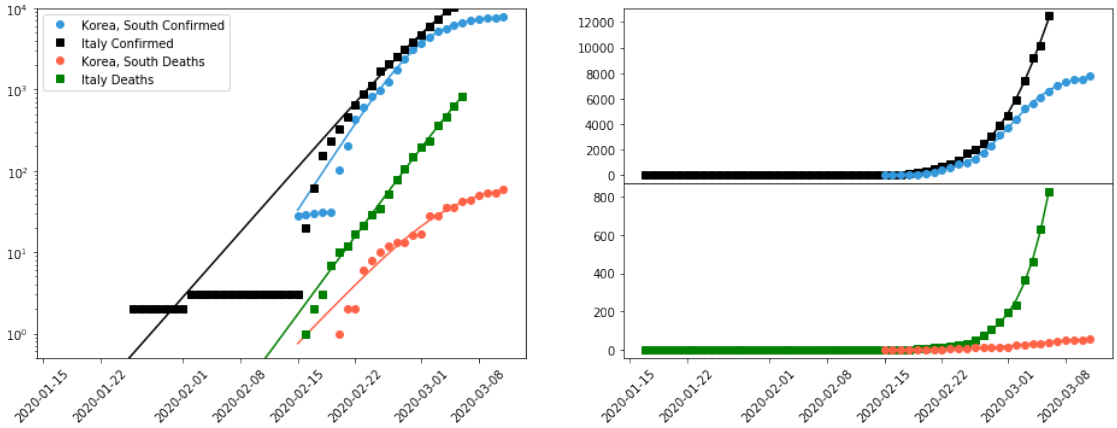
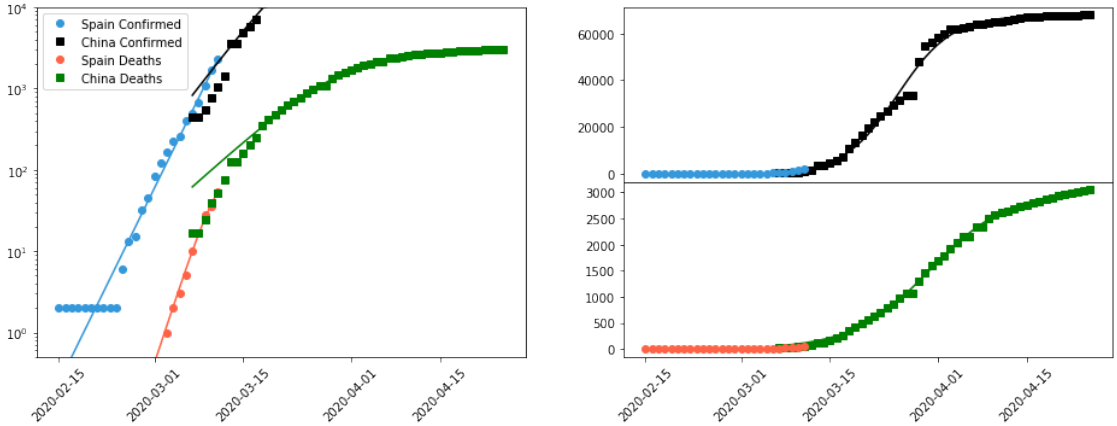
4 Comparison of two countries, with a manual time delay to align them



Germany vs Italy
Time delay added: 10 days



Korea, South vs Italy
Time delay added: -5 days



Spain vs China
Time delay added: 45 days