**10.05.2020: COVID-19 Pandemic: 50th, final, update!! Germany: Estimations no longer consolidated: Stagnation predicted for 11.5.; upper limit higher than 175 000**

The left figure shows the mean reproduction numbers (solid line) and the 97.5% quantile (dotted line) for the COVID-19 pandemic based on new infections reported by the Robert-Koch-Institut (RKI, Berlin) at the 10.5. and by Johns-Hopkins University for Italy. To avoid reporting artefacts, we smoothed observations by **moving averages** of order 7.

**NOTE:** In order to deal with temporary values, we artificially increased the last 3 observations by the 10-days mean of the ratio between the corresponding value after 3 updates and its actual appearance. Then, we determined the reproduction number at time t by the ratio of the moving averages at times t and (t-4), i.e. by relating means of successive blocks of 4 values each. Vertical lines indicate the predicted intersections with 1, the horizontal line is at 1.

The right figure shows the daily real new infections of COVID-19 (solid line) and two kind of predictions (dotted and dashed lines) for Germany. Predictions are generated by a **weighted logistic model** (dotted line) and a **weighted Gompertz model** (bold dashed line), respectively. For the first time, the Gompertz model had to be weighted also for Germany. Vertical blue dotted lines indicate Mondays, the red vertical dotted line the start of stagnation of new infections (< 500) as predicted by the Gompertz model. The horizontal dotted line indicates 500 new infections. The blue dashed line indicates the 7-days moving average in order to smooth reporting artefacts.

**Reproduction numbers** are estimated to be lower than 1 since 1.4. for Italy and since 8.4. for Germany. The 95% uncertainty region is very narrow and steadily below 1 for Italy since the beginning of April.

**However, note that the uncertainty region is again rising towards 1 for Germany.**

The Gompertz model appears to be much more realistic than the logistic model in all time regions! With the Gompertz model, stagnation (< 500 new infections) we now predict only for the 11.5. for Germany (and for the 24.5. for Italy). **Regarding the curve of the daily increases and the 7-days moving average, it is quite safe that the weekly mean will be lower than 500 distinctly later than 11.5. (tomorrow!) for Germany.** The estimated upper limit of the no. of infected people in the first wave of the pandemic is now higher than **175 000** for Germany (and around 236 000 for Italy).

**More indicators for Germany.** Reproduction number = 0.87, weekly mean of no. of infections= 879.

**After 50 updates, this is the end of my reporting!** Thank you very much for having been interested!