LATEST ON THE NUMBER OF EXPECTED DEATHS FROM THE CORONA VIRUS

About ten days ago(see- https://www.mae.ufl.edu/~uhk/CORONA-VIRUS.pdf) I made use of the latest , then available, data to come up with an estimate for total world Corona Virus deaths to be expected with time. Assuming an exponential expansion of the early stages, I came up with the formula-

$$D=124.33 \exp(0.07625 t)$$

, where D represents the number of estimated deaths and t the number of days d since Jan,22,2020 , which I have considered as day one of the present pandemic The coefficients present in this equation are based on the two data points [D,t]=[335,13] and [3300,43] . The formula is predicting the total world deaths from the Corona Virus to be 10 million by day 148 (late July). Today is day t=60 and we have, according to the formula, D=12063.The actual reported number today yields the data point [11277,60]. So the formula seems to be a pretty accurate estimator being low by about 7% over the last 60-43=17 day interval.

With more data, the more accurate the death forecast will become. It is our purpose here to generate a new improved D(t) formula using the latest sixty day data as found today at--

https://www.worldometer.info/coronavirus/

We go about this slightly differently in that we first mark down the data points at five day intervals from t=10 through t=60 using a point plot routine. Next we adjust the parameters A an B in the continuous exponential curve D=Aexp(Bt) so as to make the points fit as closely as possible to this exponential curve. This produces the new formula-

$$D=250\exp(0.062t)$$
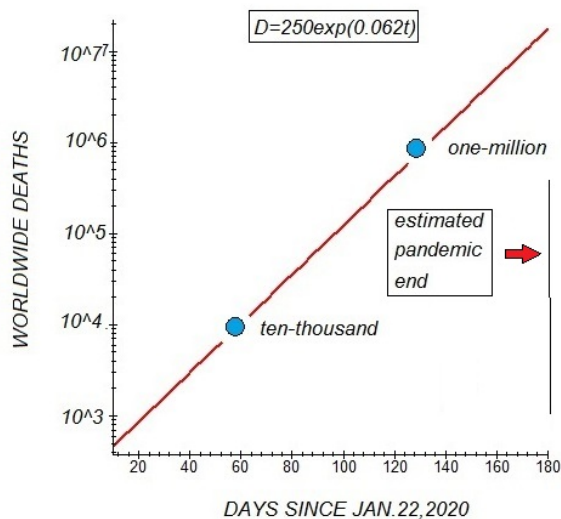
A graph of this curve follows-

EXPONENTIAL APPROXIMATION FOR CORONA VIRUS DEATHS

$$D = 250 \exp(0.062\,t)$$

CORONA VIRUS WORLD-WIDE DEATHS

DAYS SINCE JANC22,2020
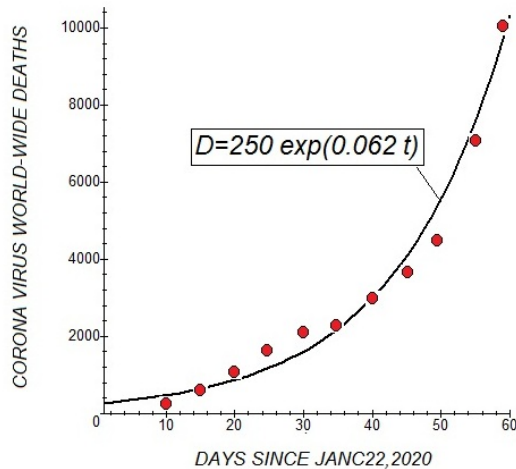
red circles represent data taken from-
https://www.worldometers.info/coronavirus/

To now make longer term predictions we re-plot this last D(t) curve out to t=180 (1/2 yr.) using a logplot operation. This produces the following straight line curve-

ESTIMATED DEATHS FROM THE CORONA VIRUS

$$D = 250\exp(0.062t)$$

WORLDWIDE DEATHS

one-million

estimated pandemic end

ten-thousand

DAYS SINCE JAN.22,2020

The ten thousand's worldwide death has just been reached and we can expect a value of ten million when t=180. Since the US has about 20% of the world's population, the deaths here are predicted to reach one half million at t=180. These numbers appear a bit too high when the million mark is reached, Comparing things with the 1918 Spanish Flu

suggests an epidemic peak at t=180 so that the total death toll for Americans will not exceed one million. I am sure a vaccine for the Corona Virus will be developed within a year but this unfortunately will be too late for many.

We will know that the world death rate is slowing down when the new red circles to be added to the above D(t) graph fall consistently below the exponential curve shown. At the moment this is not yet the case. On March 24 (t=63) the reported death total will be given as D=16558. This lies quite a bit above the exponential curve prediction of D=12425 on the same day.

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