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To
Editor,
Journal of Physics A: Mathematical and Theoretical,

April 5, 2023

Initial submission of manuscript titled: "Unifying the communicable disease spreading paradigm with Gompertzian growth"

Respected Editor,

We hereby submit a manuscript where we seek to connect the communicable disease paradigm with the recently observed mortality patterns of the initial Coronavirus pandemic in March-April 2020 that have been shown by many to exhibit Gompertzian growth. In the manuscript, we show that this type of growth pattern is incompatible with traditional communicable disease spreading models, i.e. the SIR (Susceptible-Infected-Recovered) model family of Kermack and McKendrick. Instead, the observed patterns can be explained by a simpler model without the need for a disease propagating stage, but rather through a ubiquitous stressor which elicits an instantaneous and mutual stress response, amounting to a 2-parameter model. The mathematical thesis is based on a simple Stochastic Differential Equation where the stress response is a random process, interpretable both at the macroscopic and the microscopic level. We also show a remarkable connection between coherent behavior previously relegated to microscopic quantum domains, now exhibited in national mortality patterns. In light of this, we equate one of the model parameters in the traditional disease models with the level of *coherency* of growth, where coherency has been rigorously defined in the physics literature (see manuscript).

The findings of this paper call for a fundamental and interdisciplinary discussion of our accepted knowledge on communicable diseases, as the observations constitute a classic Kuhnian "anomaly" suggesting a paradigm shift away from that of a purely communicable paradigm to a hybrid where the environment plays a bigger role.

Due to the conclusions of our paper, I request that this paper receives more reviews than your average, and at least 3 reviews. Even though we have recommended a few reviewers, perhaps you know someone who is better qualified to review, especially since we are submitting to a special section of your journal.

Thank you for your consideration.

Sincerely yours,

Matz Andreas Haugen

Enclosed :
List of two additional referees

1. M Kröger, Polymer Physics, Department of Materials, ETH Zurich, Zurich CH-8093, Switzerland, mk@mat.ethz.ch
2. R Schlickeiser, Institut für Theoretische Physik, Lehrstuhl IV: Weltraum- und Astrophysik, Ruhr-Universität Bochum, D-44780 Bochum, Germany, rsch@tp4.rub.de