Seminario SANMoMa-Graduados

Centro de Investigación en Ingeniería Matemática, CI^{2}MA, UDEC

Expositor:

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Measuring the distance between two growth models

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Resumen

Here the distance between two models is defined as a measure of differences in the dynamics that each model is capable of generating. Therefore, this work address questions such as whether the dynamics of the logistic growth model is more similar to that of the Gompertz model, or to that of the Richards model. To address these questions we define metrics of the differences in the dynamics between several models formulated by differential equations. The analysis is based on simulated data for three generalized growth models. Furthermore, with the help of mathematical and computational methods, we calculate fits and performance metrics. These quantities define the distances. As a result, it turns out that the generalized growth model is closer to the dynamics of the Richards and generalized Gompertz models, while on the contrary, the generalized Gompertz model is the furthest from Richards and the generalized logistic model. This is because the scaling parameter plays a more significant role in the generalized logistic model.

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