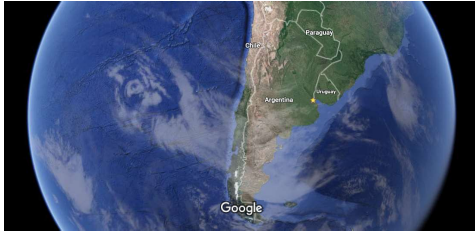


# Adjusting parameters on a mathematical model using GeoGebra

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The activities that we present consist in determining the values of the parameters of a real variable function.

These parameters are determined so that the function visually adjusts to a set of experimental data or it satisfies certain conditions.



We propose a function whose parameters are expressed as GeoGebra sliders.

We change the parameters looking for the function that better describes the situation.



From the didactic point of view, the purpose is to develop in the students capabilities related to the analysis of the role of each parameter in the mathematical model and to compare different models with each other.

This work is illustrated with two didactic-oriented examples and a growth model used in forestry engineering.

<https://www.geogebra.org/ceciliaz>



# Simple pendulum

Period depending on its length. Visual adjustment of the parameters of a model for the period of a simple pendulum as a function of its length, from experimental data.



The behavior of the floor function by analyzing the graph obtained in GeoGebra. Analyze the behavior of  $a\text{floor}(bx) + c$  from a dynamic graph using the sliders  $a, b, c$ . Use the model for determinate  $a, b, c$  in a particular problem.



In the framework of scientific research to determine parameter values of growth models. These values were used as the initial values to accelerate the convergence of linear or non-linear approximation methods with other tools.

Thesis Andrés Manceñido





MUCHAS GRACIAS

