

TITLE: INTELLIGENT DECISION SUPPORT SYSTEM TO OPTIMALLY DISTRIBUTE THE APPLICATION OF RAPID COVID-19 TESTS

TECHNOLOGY DESCRIPTION

It is a Decision Support System that, given a number of available tests and a fixed time horizon, provides the optimal number of tests to be carried out in each population and each day in order to minimize the number of infected during said period. This Decision Support System is based on SEIR mathematical models, reformulated to measure the impact of the test carried out on the future evolution of the pandemic, and also on Operational Research techniques to optimize the distribution of the tests. Currently, it is being adapted to also obtain the optimal distribution of vaccines according to locations, but respecting the established criteria of priority groups.

BUSINESS APPLICACIÓN SECTORS

Public health, public administrations, test companies, private companies established in different populations that wish to minimize infections among their staff due to the early detection of COVID-19 cases.

TECHNICAL ADVANTAGES AND BUSINESS BENEFITS

One of the main advantages is the increase in the efficiency of the tests carried out, since this system indicates how many tests should be carried out each day and in which locations and sectors. This makes it possible to detect cases that have gone unnoticed in the tracking chain, thus reducing the number of infected. In the simulations carried out, comparing this method versus others, such as the distribution of tests proportionally to the inhabitants of each population and also homogeneous over time, we obtain a savings of infections between 100% -200% greater. In addition, another notable advantage is the daily update of the system, which allows the model to be adjusted to new scenarios.

TECHNOLOGY DEVELOPMENT LEVEL

A prototype is available ready for development and commercialization.

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SEARCHED COLLABORACIÓN

Collaboration with interested companies to carry out concept tests of the technology that facilitate its commercialization and industrial implementation.

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RELATED PICTURES

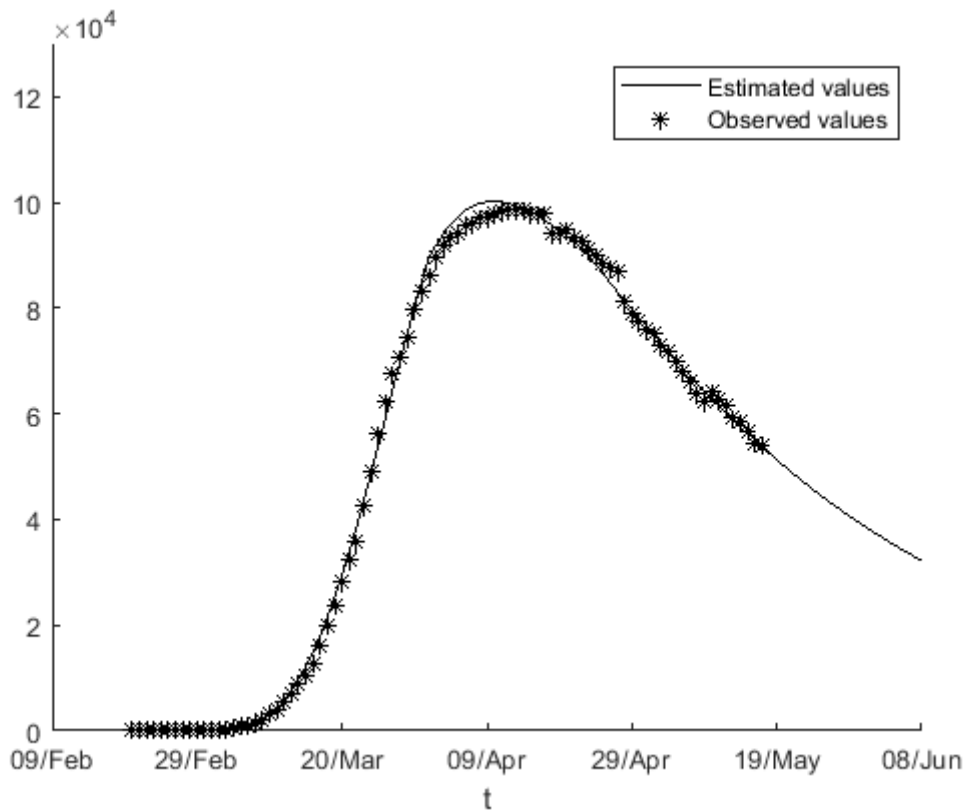


Figure 1: Infected curve

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