Understanding cocaine consumption in Spain using a bayesian selection model approach

Francisco Guerrero[a], **María Rubio**[b],
Francisco-José Santonja[c**], **Rafael-Jacinto Villanueva**[b].

[a]Departamento de Matemática Aplicada. Universitat de València.
[b]Instituto de Matemática Multidisciplinar. Universitat Politècnica de València.
[c]Departamento de Estadística e Investigación Operativa. Universitat de València.

Abstract

Approximate Bayesian Computation (ABC) methods can be considered as a tool for model selection among different valid ones describing a determined phenomenon. This technique allows us to discriminate among the set of candidates models. In this work, we propose several valid models, based on systems of differential equations, to study the transmission dynamics of the cocaine consumption in Spain and using the ABC technique we will select the model that best match the Spanish scenario.

Keywords: Cocaine consumption; Random differential equations; Type-epidemiological models; Uncertainty Quantification.

**Corresponding author. Email: francisco.santonja@uv.es