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ESCOLA DE CIÊNCIAS E TECNOLOGIA
DEPARTAMENTO DE MATEMÁTICA

Centro de Investigação em Matemática e Aplicações
Departamento de Matemática
Programa de Doutoramento em Matemática

Seminário / Seminar

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Zoom address: https://videoconf-colibri.zoom.us/j/5664652821?pwd=WXJBSWUxL25vR3hJUWRhWHpoWENSdz09

Pulse vaccination in a SIR model: Global dynamics, bifurcations and seasonality

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Abstract: In this informal talk, I analyze a periodically forced dynamical system inspired by the SIR model with impulsive vaccination. I characterize its dynamics according to the proportion of vaccinated individuals and the time between doses. I draw the associated bifurcation diagram. I also explore analytically and numerically chaotic dynamics by adding seasonality to the disease transmission rate. This is a joint work with João Maurício de Carvalho (University of Porto). This non-technical seminar is directed to students and researchers not familiarized with the topic.

Keywords: SIR model, impulsive differential equation, bifurcations, chaos.