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CENTRO DE I&D EM MATEMÁTICA E APLICAÇÕES
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Characterization of μ-dichotomies via time rescaling and generalized Sacker-Sell spectrum

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Abstract

The notion of exponential dichotomy, introduced by Perron in 1930, and the recent generalizations of this notion play an important role in the qualitative study of nonautonomous dynamical systems. In this talk, it will be shown that, for discrete-time nonautonomous linear dynamics and a large class of discrete growth rates μ, the notion of μ-dichotomy (with respect to a sequence of norms) can be completely characterized in terms of ordinary and exponential dichotomy (with respect to a sequence of norms). This result is obtained by employing a suitable rescaling of time and generalizes a result by Davor Dragičević for the particular case of polynomial dichotomies. Additionally, as a nontrivial application, it is studied the structure of a generalized Sacker-Sell spectrum, defined with μ-dichotomies, and obtained a series of nonautonomous topological and smooth linearization results. This talk is based on joint work with Davor Dragičević that resulted in the preprint `https://arxiv.org/pdf/2501.06630`.

Room 11.2.21
March 20, 2025 - 11:00

This seminar is supported in part by FCT–Portuguese Foundation for Science and Technology, under the FCT Multi-Annual Financing Program, through the Center for Research and Development in Mathematics and Applications (CIDMA) of Universidade de Aveiro.

fct Fundação para a Ciência e a Tecnologia

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