Nonuniform μ-Dichotomy Spectrum and kinematic similarity

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The dichotomy spectrum (also called dynamical spectrum and Sacker-Sell spectrum), defined with exponential dichotomies, was introduced by Sacker and Sell and used to study linear skew product flows with compact base. A version of dichotomy spectrum defined with nonuniform exponential dichotomies, the so called nonuniform dichotomy spectrum, was considered in papers by Zhang and by Chu, Liao, Siegmund, Xia and Zhang.

For linear nonautonomous differential equations we introduce a family of spectrums, defined with general nonuniform dichotomies, that contain the nonuniform dichotomy spectrum as the very particular case of exponential growth rates. We describe all possible forms of this spectrum for a general growth rate and obtain a reducibility result for nonautonomous linear differential equations using the introduced spectrums. We also give an illustrative example.

This talk is based on recent work: https://doi.org/10.48550/arXiv.2205.07391. C. Silva was partially supported by Fundação para a Ciência e a Tecnologia (Portugal) through CMA-UBI (project UIDB/00212/2020).

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