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Centro de **Matemática**
Universidade do Porto

Dynamical Systems Seminar

Date. November 27, 14h30

Place. Room M031

Speaker. Silvius Klein[1] (Norwegian University of Science and Technology, Norway)

Title. Continuity, positivity and simplicity of the Lyapunov exponents for linear quasi-periodic cocycles

Abstract. In some previous works, P. Duarte and I have developed an abstract scheme of proving continuity properties of the Lyapunov exponents and of the Oseledets filtration associated with general linear cocycles, by means of large deviation type estimates. The purpose of this talk is to describe a recent result that fits this abstract scheme, concerning analytic quasi-periodic cocycles on the higher dimensional torus. The main new feature of this result is allowing the determinant of the matrix-valued function defining the linear cocycle to vanish identically. As consequences of this result, we obtain sharp lower bounds on the Lyapunov exponents of Schrödinger-type operators, as well as a sufficient condition ensuring that they have multiplicity one. [Joint work with Pedro Duarte from University of Lisbon.]

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[1]Silvius Klein is a postdoctoral fellow at the Norwegian University of Science and Technology (NTNU). He has obtained his PhD from UCLA, where he employed tools from analysis to study spectral properties of discrete Schrodinger operators. A visit and subsequent postdoctoral position in Lisbon lead to his research interests drifting towards dynamical systems, more precisely the study of the Lyapunov exponents of linear cocycles.

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