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SEMINAR OF NUMERICAL ANALYSIS

➤ **WEDNESDAY 26 FEBRUARY 2014 - ROOM MA B1 11 - 15h15**

Prof. Nicola GUGLIELMI (University of L'Aquila, Italy) will present a seminar entitled :

“Approximation of Lyapunov exponents of linear switched systems of odes”

Abstract:

We present a new approach for constructing polytope Lyapunov functions for continuous-time linear switching systems (LSS). This allows us to decide the stability of LSS and to compute the Lyapunov exponent with a good precision in relatively high dimensions. The same technique is also extended for stabilizability of positive systems by evaluating a polytope concave Lyapunov function (“antinorm”).

The absolute error in the Lyapunov exponent computation (the distance between lower and upper bound) is estimated from above and proved to be linear in the dwell time.

The practical efficiency of the new method is demonstrated in several examples and in quite large dimension for positive systems.

This is a joint work with Linda Laglia (University of L'Aquila) and Vladimir Protasov (Moscow State University).

Lausanne, 5 February 2014/AA/cr