

Dynamical Systems Seminar

Date. September 27, 14h00m

Place. Room M031

Speaker. Vitor Araújo¹ (UFBA – Brasil)

Title. Infinitesimal Lyapunov functions and sectional-hyperbolicity

Abstract. We present an extension of the notion of infinitesimal Lyapunov function to singular flows, and from this technique we deduce a characterization of partial/sectional hyperbolic sets. In absence of singularities, we can also characterize uniform hyperbolicity. These conditions can be expressed using the space derivative DX of the vector field X together with a field of infinitesimal Lyapunov functions only, and are reduced to checking that a certain symmetric operator is positive definite at the tangent space of every point of the trapping region.

(Joint work with Luciana Salgado, being part of her PhD thesis.)

¹Vitor Araújo é professor adjunto da Universidade Federal da Bahia, bolsista de produtividade em pesquisa do Conselho Nacional de Desenvolvimento Científico e Tecnológico, com experiência na área de Matemática, com ênfase em Sistemas Dinâmicos e Teoria Ergódica, actuando principalmente nos seguintes temas: random perturbations, stochastic stability, physical probabilities, non-uniform expansion, non-uniform hyperbolicity, partial hyperbolicity e singular-hyperbolicity.