SIMPLE LYAPUNOV SPECTRUM FOR CERTAIN LINEAR COCYCLES OVER PARTIALLY HYPERBOLIC MAPS

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Criteria for the simplicity of the Lyapunov spectra of linear cocycles have been found by Guivarc'h-Raugi, Gol'dsheid-Margulis and, more recently, Bonatti-Viana and Avila-Viana. In all the cases, the authors consider cocycles over hyperbolic systems, such as shifts or Axiom A diffeomorphism. In this work we extend such criteria to situations where the base map is just partially hyperbolic. This raises a lot of new issues concerning, among others, the recurrence of the holonomy maps and the (lack of) continuity of the Rokhlin disintegrations of u-states. Our main results are stated for certain partially hyperbolic skew-products whose iterates have bounded derivatives along center leaves. This is a joint work with Marcelo Viana.