

Absolute continuity, Lyapunov exponents and rigidity

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Abstract: I report on an ongoing joint project with Artur Avila and Amie Wilkinson, where ideas from the theory of linear cocycles are applied to the dynamics of partially hyperbolic diffeomorphisms.

The starting point is to view the diffeomorphism as a *smooth* cocycle over itself, acting on a fiber bundle whose fibers are the center leaves.

The sharpest results hold in dimension 3. We prove, in a number of situations, that absolute continuity of the foliation implies rigidity, meaning smooth conjugacy to a rigid model. Moreover, if absolute continuity breaks down then the disintegration must be atomic.