Equilibrium States are determined by their unstable conditionals

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A fundamental result in differentiable ergodic theory is the existence and uniqueness of equilibrium states associated to Hölder potentials for uniformly hyperbolic systems. Of particular interest is the case when the potential is minus the logarithm of the Jacobian of the restriction to the unstable direction. In this case the equilibrium state is the SRB measure, which can be characterized also as the unique (assuming transitivity) invariant measure such that their unstable conditionals are absolutely continuous with respect to the Lebesgue class along unstables.

Together with Federico Rodriguez-Hertz we started a project to extend this part of the theory to maps associated to general Anosov actions, dealing both with the classical case and the higher rank case.

In this talk we will discuss the following fact: equilibrium states associated to Hölder potentials (for generic elements of Anosov actions) are determined by their unstable conditionals, pretty much in the same way as in the SRB case. Even in the uniformly hyperbolic case this seems to be new.