

Gibbs cu-states and applications
Jiagang Yang - (UFF)

This is a joint work with Marcelo Viana.

Abstract

In this talk, we will study the cu equilibrium states for maps with dominated splitting. cu equilibrium states are good candidates for physical measures, which is different with the Gibbs-u states.

First, we will use these class of measures to give very quick proofs of the existence of physical measures for several well known example: circle map with a unique nutral fixed point, and the Bonatti-Viana's example. In fact, we will show that C^1 generic diffeos in the class of Bonatti-Viana's example, should have a unique physical measure, and whose basin covers full volume.

We will also provide a new way to study Lorenz like attractor. An chain recurrent class is called Lorenz like attractor if it is Lyapunov stable, and whose tangent bundle admits a sectional hyperbolic splitting. We will show that every Lorenz like attractor contains a non-trivial homoclinic class. Moreover, if the systll is C^{1+} , then it adimits physical measures with basins covering full volume. This generalized several similar results in dimension 3. As an application, we give a positve answer for the following conjecture: For typical star flow, it has only finitly many chain recurrent classes. More applications about random perturbation will also be mentioned.