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What are SRB and GSRB measures, and a new characterisation of their existence.

Abstract:

SRB measures are an important object in dynamical systems and mathematical physics. Named after Sinai, Ruelle and Bowen, these measures have important properties of being equilibrium states which describe chaotic behaviour, yet may also describe the asymptotic of events in the phase space. An open and important question, is in what generality do systems admit SRB measures?

We present the notion of generalised SRB measures (GSRB in short), mention some of their important properties, and present a new condition to characterise their existence on a general setup.

The first part of the talk will describe some of the motivation leading to define and to study SRB measures; and so we will define GSRB measures and compare their properties with the properties sought for SRB measures. We will also describe a case study of examples motivating to study GSRB measures. Our new result is a characterisation of systems admitting GSRB measures.

In the second part of the talk, as much as time permits, we will present some key steps in the construction of GSRB measures.