Juan Rivera-Letelier, University of Rochester (USA)

Thermodynamic formalism of one-dimensional maps

In the last few decades there has been great collective effort to extend the thermodynamic formalism beyond the classical uniformly hyperbolic setting, which was developed by Sinai, Ruelle, and Bowen. The focus of this mini-course will be on the recent progress in the one-dimensional setting, where a complete picture is emerging. After a review of the ergodic theory of smooth one-dimensional maps, we will concentrate on the (non-)existence and uniqueness of equilibrium states, and the recent classification of phase transitions for geometric potentials. If time permits we will describe the various surprising phenomena that occur at criticality. We will emphasize the analogy with statistical mechanics whenever possible.