Properties of Non-Equilibrium Steady States for the non-linear BGK equation on the torus

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We study the BGK equation on the 1d torus coupled to a spatially inhomogeneous thermostat. This model is kept out of equilibrium due to the action of the thermostat and we study properties of stationary solutions - which are the so-called non equilibrium steady states, which do not have an explicit formula. I will talk about how we show existence, uniqueness and linear stability of a spatially inhomogeneous steady state. This is based on a joint work with Jo Evans.

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