

Title: Zero temperature convergence of Gibbs measures for locally a finite potential in a 2-dimensional lattice

Abstract: We consider the space of all configurations over a 2-dimensional lattice and over a finite alphabet. A Gibbs measure is a spatially invariant measure on the space of configurations associated to a given potential at a certain temperature. A potential is locally finite if it depends on a finite index set. We want to understand the limit of these Gibbs measures when the temperature goes to zero. It may happen that the limit does not exist and several accumulation measures appear for complex potentials. For 1-dimensional lattices and locally finite potentials, the limit does exist. We show that it is not anymore true for 2-dimensional lattices. This result extends a similar result proved by Chazottes and Hochman for lattices in dimension 3 or higher, or in Chazottes and Shinoda in dimension 2 that use a different proof. This result is a joint work with S. Barbieri, R. Bissacot, and Gregorio Dalle Vedove.