Non-equilibrium modulated phases in a system with local energy input[1] LINJUN LI, MICHEL PLEIMLING, Virginia Tech — The equilibrium phase diagram of the two-dimensional Ising model in contact with a single heat bath is well understood. We here study the properties of the two-dimensional Ising model with conserved dynamics where the two halves of the system are in contact with different heat baths. Using Monte Carlo simulations, we identify three different phases for this non-equilibrium system, as a function of the aspect ratio of the lattice and of the temperatures. The first phase is characterized by the complete disorder of the particles, while the second phase is characterized by the complete order of the particles. The third phase is the most interesting one as it displays stripes with widths that depend on the system parameters. The full phase diagram of our non-equilibrium system is determined through the study of the structure factor.

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