SCALING LIMIT OF THE CONDENSATE DYNAMICS IN A REVERSIBLE ZERO RANGE PROCESS

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Resumo/Abstract:
Zero range processes with decreasing jump rates can equilibrate in a condensed phase when the particle density exceeds a critical value. In this phase a non-trivial fraction of the mass in the system concentrates on a single site, the condensate. At suitably long time scales, the location of this site changes. Beltrán and Landim have studied the motion of the condensate for zero range processes on finite sets and have shown that - observed at the right time scale - it converges to a random walk on this set. In this work we consider a supercritical nearest neighbor symmetric zero range process on the discrete torus $\frac{1}{L}Z/Z$. We show that the scaling limit of the condensate dynamics is a Lévy process on the unit torus with jump rates inversely proportional to the jump length.

Joint work with Inés Armendáriz and Stefan Grosskinsky