HYDRODYNAMIC LIMITS OF INTERACTING PARTICLE SYSTEMS IN PERIODIC REALIZATIONS OF CRYSTAL LATTICE

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ABSTRACT. We study the hydrodynamic limits of simple exclusion processes and zero range processes in crystal lattices. To fix the idea, we give the proof in the case of zero range process. Starting with a fixed harmonic realization, we derive the limit for zero range process, which depends on both the structure of crystal lattice and the harmonic realization. We obtain how the limit equation depends on the choices of the realizations, which gives us get the limit equation in general periodic realization.