[P11] Mesoscopic condensation in a driven-diffusive system with pair exclusion

Sang-Woo Kim, University of Seoul

We consider the zero-range process with a pair exclusion. Our model consists of N particles. Each particle has one partner and each pair is forbidden to stay at the same site. Without pair exclusion, the system displays a macroscopic condensation. Pair exclusion leads to a drastic change. The number of condensates and the size of a condensate scale as $(N/\ln N)^{1/2}$ and $(N \ln N)^{1/2}$, respectively. These results are derived analytically and verified numerically.

References

[1] Sang-Woo Kim, Joongul Lee and Jae Dong Noh, Phys. Rev. E **81**, 051120 (2010).