

Derrida, Bernard

Matrix ansatz and large deviations of the density in exclusion processes. (English)

[Zbl 1099.60069](#)

Sanz-Solé, Marta (ed.) et al., Proceedings of the international congress of mathematicians (ICM), Madrid, Spain, August 22–30, 2006. Volume III: Invited lectures. Zürich: European Mathematical Society (EMS) (ISBN 978-3-03719-022-7/hbk). 367-382 (2006).

Summary: Exclusion processes describe a gas of particles on a lattice with hard core repulsion. When such a lattice gas is maintained in contact with two reservoirs at unequal densities, or driven by an external field, it exhibits a non-equilibrium steady state. In one dimension, a number of properties of this steady state can be calculated exactly using a matrix ansatz. This talk gives a short review on results obtained recently by this matrix ansatz approach.

For the entire collection see [[Zbl 1095.00006](#)].

MSC:

- [60K35](#) Interacting random processes; statistical mechanics type models; percolation theory
- [82C26](#) Dynamic and nonequilibrium phase transitions (general) in statistical mechanics
- [60F10](#) Large deviations

Cited in 4 Documents

Keywords:

[Non-equilibrium statistical mechanics](#)