

Abstract Submitted  
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**Scaling of noise correlations in one-dimensional lattice hard-core boson systems** KAI HE, MARCOS RIGOL, Department of Physics, Georgetown University — Noise correlations are studied for systems of hard-core bosons in one-dimensional lattices. We use an exact numerical approach based on the Bose-Fermi mapping and properties of Slater determinants. We focus on the scaling of the noise correlations with system size in superfluid and insulating phases, which are generated in the homogeneous lattice, with period-two superlattices, and with uniformly distributed random diagonal disorder. For the superfluid phases, the leading contribution is shown to exhibit a density independent scaling proportional to the system size, while the first subleading term exhibits a density dependent power-law exponent.

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