

Titel: Decay of correlations and absence of superfluidity in the disordered Tonks-Girardeau gas

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Abstract:

We consider the Tonks-Girardeau gas subject to a random external potential. If the disorder is such that the underlying one-particle Hamiltonian displays localization (which is known to be generically the case), we show that there is exponential decay of correlations in the many-body eigenstates. Moreover, there is no Bose-Einstein condensation and no superfluidity, even at zero temperature. (Joint work with R. Seiringer).