

Abstract Submitted
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Moving Impurities and Spin-Boson Systems in One-Dimensional BECs THOMAS SCHMIDT, PETER ORTH, KARYN LE HUR, Yale University
— We theoretically investigate the dynamics of two moving impurities immersed in a one-dimensional interacting Bose liquid. Interactions between the two impurities are mediated via excitations in the quantum liquid, and lead to correlations between them. For certain parameter regimes, the system can be mapped onto a spin-boson model, in which the relative momentum of the impurities plays the role of a spin-1/2 or spin-1. We will discuss the implications of the spin-impurity model onto observables of the liquid and impurities.

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