

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Mobile impurities in ferromagnetic liquids¹ ADRIAN KANTIAN, Universite de Geneve, ULRICH SCHOLLWOCK, Ludwigs-Maximillan Universitaet Munich, THIERRY GIAMARCHI, Universite de Geneve — Recent work has shown that mobile impurities in one dimensional interacting systems may exhibit behaviour that differs strongly from that predicted by standard Tomonaga-Luttinger liquid theory, with the appearance of power-law divergences in the spectral function signifying sublinear diffusion of the impurity. Using time-dependent matrix product states, we investigate a range of cases of mobile impurities in systems beyond the analytically accessible examples to assess the existence of a new universality class of low-energy physics in one-dimensional systems.

Correspondence: Adrian.Kantian@unige.ch

¹This work was supported in part by the Swiss SNF under MaNEP and division II.

Adrian Kantian
Universite de Geneve

Date submitted: 19 Nov 2010

Electronic form version 1.4