

Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Superdiffusive nonequilibrium transport of an impurity in a Fermi sea HYUNGWON KIM, DAVID HUSE, Princeton University — We discuss a nonequilibrium transport of a single impurity atom immersed in a low-temperature Fermi sea with a short range interaction. We find that the impurity does a superdiffusive geometric random walk in which the characteristic momentum decay rate shows a quartic decrease in its momentum in three dimension. Then, we construct a master equation and its scaled form that governs the time evolution of the impurity. Next, we discuss two dimensional case in which the momentum decay rate decreases with the third power of its momentum.

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Date submitted: 08 Nov 2011

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