

Random Walk in a one-dimensional Levy random environment

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In this talk we introduce a model for a one-dimensional Levy-Lorentz gas corresponding to a random walk in random environment on the line. The environment is provided by a renewal point process with inter-distances having a Levy-type distribution, that can be seen as a set of randomly arranged static scatterers. We investigate the quenched behavior of the walk in the case of inter-distances having finite mean but infinite variance and provide asymptotic results about its distribution and moments . In particular we show that, contrary to the annealed case, the quenched behavior of the motion is diffusive.

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