THE ENVIRONMENT VIEWED FROM THE PARTICLE FOR CERTAIN RANDOM WALKS IN RANDOM ENVIRONMENT

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The environment viewed from the particle has been a powerful tool in the investigation of random conductance models. For (non-reversible) random walks in random environment the problem of the equivalence of the static and dynamic points of view is understood only in a few cases. The case of Dirichlet environment, which corresponds to the case where the transition probabilities at each site are iid Dirichlet random variables, is particularly interesting since its annealed law corresponds to the law of a reinforced random walk. In this talk, we will characterize, for Dirichlet environments in dimension larger or equal to 3, the cases where the static and dynamic points of view are equivalent. We can deduce from this a complete characterization of the ballistic regimes in dimension larger or equal to 3. The proof is based on crucial property of statistical invariance by time reversal valid for the class of Dirichlet environments.

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