The intermediate disorder regime for directed polymers in dimension $1 + 1$. (English summary)


In this paper the authors study directed polymers in a random environment. They introduce a new disorder regime, called, the *intermediate regime*, obtained by scaling to zero the parameter $\beta$, which rules the inverse temperature, as the polymer length $n$ tends to infinity. More precisely, the choice $\beta_n = \beta n^{-1/4}$ corresponds to the critical scaling for the intermediate regime. This regime sits between the weak and the strong disorder regimes and the behavior of the polymer in the intermediate regime presents features of both the weak and the strong regimes. The fluctuation exponents for the intermediate regime coincide with those for the weak disorder; the fluctuations themselves are not decoupled from the random environment, as happens in the strong disorder regime. The asymptotics of the random polymer measure are established and the limiting law does not depend on the distribution of the environment.

References


30. Lacoin, H. (2010). New bounds for the free energy of directed polymers in dimen-

Note: This list reflects references listed in the original paper as accurately as possible with no attempt to correct errors.

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