

**Ioffe, Dmitry; Velenik, Yvan**

**An almost sure CLT for stretched polymers.** (English) Zbl 1286.60026  
Electron. J. Probab. 18, Paper No. 97, 20 p. (2013).

The authors consider diffusive behaviour in  $\mathbb{Z}^{d+1}$ ,  $d \geq 3$ , for the related models of stretched polymers. A stretched path  $\gamma$  can be any nearest-neighbour path on  $\mathbb{Z}^{d+1}$ . The disorder is modeled by a collection  $\{V(x)\}_{x \in \mathbb{Z}^{d+1}}$  of i.i.d. non-negative random variables. Each visit of the path to a vertex  $x$  exerts the price  $\exp(-\beta V(x))$ ,  $\beta > 0$ . One (of two) way of introduction of the stretch is that the path  $\gamma$  has a fixed length, but it is subject to a drift, which can be interpreted physically as the effect of a force acting on the polymer's free end. In the paper, an almost-sure central limit theorem is established for the endpoint of the fixed-length version of the model of stretched polymers with non-zero drifts, also at sufficiently high temperatures and in all dimensions  $d + 1 \geq 4$ .

Reviewer: [Utkir A. Rozikov \(Tashkent\)](#)

**MSC:**

- [60F05](#) Central limit and other weak theorems
- [60K35](#) Interacting random processes; statistical mechanics type models; percolation theory
- [82B41](#) Random walks, random surfaces, lattice animals, etc. in equilibrium statistical mechanics
- [82B44](#) Disordered systems (random Ising models, random Schrödinger operators, etc.) in equilibrium statistical mechanics
- [82D60](#) Statistical mechanics of polymers

**Keywords:**

[polymers](#); [random walk representation](#); [random environment](#); [weak disorder](#); [central limit theorem \(CLT\)](#)

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