

**Garbaczewski, Piotr; żaba, Mariusz**

**Nonlocal random motions and the trapping problem.** (English) Zbl 1371.60081

*Acta Phys. Pol. B* 46, No. 2, 231-246 (2015).

Summary: Lévy stable (jump-type) processes are examples of intrinsically nonlocal random motions. This property becomes a serious obstacle if one attempts to model conditions under which a particular Lévy process may be subject to physically implementable manipulations, whose ultimate goal is to confine the random motion in a spatially finite, possibly mesoscopic trap. We analyze this issue for an exemplary case of the Cauchy process in a finite interval. Qualitatively, our observations extend to general jump-type processes that are driven by non-Gaussian noises, classified by the integral part of the Lévy-Khintchine formula. For clarity of arguments, we discuss, as a reference model, the classic case of the Brownian motion in the interval.

**MSC:**

**60G51** Processes with independent increments; Lévy processes

**Full Text:** [DOI](#)