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On the return to equilibrium. (Italian. English summary) Zbl 1008.60015

Atti Accad. Naz. Lincei, Cl. Sci. Fis. Mat. Nat., IX. Ser., Rend. Lincei, Mat. Appl. 10, No. 3, 213-218 (1999).

The author considers a random walk on the group of integers starting from the origin and whose steps admit as possible values exactly two integers a and b such that $a < 0 < b$. Then for the case $a = -1$ the author gives an explicit expression for the law of the first return time to the origin

$$P(T = n(b+1)) = \frac{b}{n(b+1) - 1} \binom{n(b+1)}{nb} p^{nb} (1-p)^n,$$

where $p = P(X = -1)$. The presentation is elegant and historical considerations are presented.

Reviewer: [Claudi Alsina \(Barcelona\)](#)

MSC:

60C05 Combinatorial probability

60G50 Sums of independent random variables; random walks

Keywords:

random walk; Ballot problem; taboo probabilities