UDC 519.21
DOI: 10.17377/mattrudy.2016.19.102

MATEMATICHESKIE TRUDY
2016, V. 19, N 1, 46–69

STABILITY THEOREMS AND THE SECOND-ORDER ASYMPTOTICS IN THRESHOLD PHENOMENA FOR BOUNDARY FUNCTIONALS OF RANDOM WALKS

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In Section 1, we prove stability theorems for a series of boundary functionals of random walks. In Section 2, we suggest a new simpler proof of the theorem on threshold phenomena for the distribution of the maximum of the consecutive sums of random variables. In Section 3, we find the second-order asymptotics for this distribution under the assumption that the third moments of the random variables exist.

Key words and phrases: random walks, boundary functionals, stability theorems, threshold phenomena, second-order asymptotics, asymptotic expansions.

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Received
October 13, 2015

Translated into English:
Siberian Advances in Mathematics, V. 26, N 4, 231–246 (2016).
DOI: 10.3103/S1055134416040015