

**RANDOM WALKS
IN THE POSITIVE QUADRANT. II***A. A. Mogul'skii and B. A. Rogozin*

In the article, we consider a two-dimensional random walk $S(n) = S(\gamma, n)$, $n = 1, 2, \dots$, generated by the sequence of sums $S(\gamma, n) = \gamma + \xi(2) + \dots + \xi(n)$ of independent random vectors $\gamma, \xi(2), \dots, \xi(n), \dots$, with initial random state $\gamma = S(\gamma, 1)$; in addition, we assume that the vectors $\xi(i)$, $i = 2, 3, \dots$, have the same distribution F that differs in general from the distribution \bar{F} of the initial state γ . We study boundary functionals, in particular, the state of the random walk at the first exit time from the positive quadrant.

In Part II, we study large deviations for the state of a random walk at the first exit time from the positive quadrant.

Key words and phrases: boundary problem, large deviation, factorization identity, deviation function, second deviation function.

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