

**ON THE DISTRIBUTION OF THE FIRST EXIT TIME
AND OVERSHOOT IN A TWO-SIDED BOUNDARY
CROSSING PROBLEM**

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We consider a random walk generated by a sequence of independent identically distributed random variables. We assume that the distribution function of a jump of the random walk equals an exponential polynomial on the negative half-axis. For double transforms of the joint distribution of the first exit time from an interval and overshoot, we obtain explicit expressions depending on finitely many parameters that, in turn, we can derive from the system of linear equations. The principal difference of the present article from similar results in this direction is the rejection of using factorization components and projection operators connected with them.

Key words and phrases: random walk, two-sided boundary crossing problem, moment generating functions.

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