

## EXACT ASYMPTOTICS FOR THE DISTRIBUTION OF THE TIME OF ATTAINING THE MAXIMUM FOR A TRAJECTORY OF A COMPOUND POISSON PROCESS WITH LINEAR DRIFT

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We consider the random process  $at - \nu_+(pt) + \nu_-(-qt)$ ,  $t \in (-\infty, \infty)$ , where  $\nu_-$  and  $\nu_+$  are independent standard Poisson processes if  $t \geq 0$  and  $\nu_-(t) = \nu_+(t) = 0$  if  $t < 0$ . Under certain conditions on the parameters  $a$ ,  $p$ , and  $q$ , we study the distribution function  $G = G(x)$  of the time of attaining the maximum for a trajectory of this process. In the present article, we find an exact asymptotics for the tails of  $G$ . We also find a connection between this problem and the statistical problem of estimation of an unknown discontinuity point of a density function.

*Key words and phrases:* compound Poisson process with linear drift, estimation of a discontinuity point of a density, exact asymptotics for distribution tails.

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Received  
March 30, 2019  
Revised  
April 21, 2019  
Accepted  
June 10, 2019

Translated into English:

*Siberian Advances in Mathematics*, V. 30, N 1, 26–42 (2020).  
DOI: 10.3103/S1055134420010034