

**ASYMPTOTIC REPRESENTATIONS FOR  
CHARACTERISTICS OF EXIT FROM AN INTERVAL  
FOR STOCHASTIC PROCESSES WITH  
INDEPENDENT INCREMENTS**

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Given a homogeneous process  $\xi(t)$  with independent increments, we consider the random variables  $T = \inf \{t \mid \xi(t) \notin [-a, b]\}$  ( $a \geq 0, b > 0$ ) and  $\xi(T)$ , as well as  $\theta$ , the first passage time across the level  $b$  by the process  $\xi(t) - a - \min \left\{ -a, \inf_{s \leq t} \xi(s) \right\}$ . We find asymptotic expansions for the distribution  $\xi(T)$  and for  $\mathbb{E}T$  and  $\mathbb{E}\theta$  as  $b \rightarrow \infty$ .

*Key words and phrases:* boundary crossing problem, first exit time, stochastic processes with independent increments, factorization method.

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