

论文

## LIMIT LAWS OF LIFETIME FOR A CONSECUTIVE K-WITHIN-M-OUT-OF-N SYSTEM

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收稿日期 修回日期 网络版发布日期 接受日期

**摘要** A consecutive k-within-m-out-of-n system consists of n identical and stochastically independent components arranged on a line (or circle). The system will fail if and only if within m consecutive components, there are at least k failures. Let  $T_n$  be the system's lifetime. We prove that only two types are possible for limit distribution of  $T_n$ . We also give the conditions under which there exist  $\{a_n\}$ ,  $\{b_n\}$ ,  $a_n > 0$ ,  $b_n \in \mathbb{R}$  such that  $(T_n - b_n)/a_n$  converges in distribution to the two given limit types.

**关键词** [Limit types, reliability, consecutive k-](#)

分类号

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**Key words** [Limit types](#) [reliability](#) [consecutive k-within-m-out-of-n system.](#)

DOI:

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