Shape properties of randomly stopped counting processes with applications in queueing and inventory models

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SUMMARY

In the present paper we derive structural properties on the log-convexity and log-concavity of randomly stopped counting processes. The log convexity property is used in order to give conditions such that the number of customers waiting in a queue is a log convex random variable. The log concavity property guarantees that the cost function in inventory models with random lead times remains quasi convex.

Keywords: log convexity (concavity), counting process, stochastic order, inventory model

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