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Using max-plus algebra for the evaluation of stochastic process algebra prefixes. (English)

Zbl 1007.68133

De Alfaro, Luca (ed.) et al., Process algebra and probabilistic methods. Performance modelling and verification. Joint international workshop, PAPM-PROBMIV 2001, Aachen, Germany, September 12-14, 2001. Proceedings. Berlin: Springer. Lect. Notes Comput. Sci. 2165, 152-167 (2001).

Summary: In this paper, the concept of complete finite prefixes for process algebra expressions is extended to stochastic models. Events are supposed to happen after a delay that is determined by random variables assigned to the preceding conditions. Max-plus algebra expressions are shown to provide an elegant notation for stochastic prefixes not containing any decisions. Furthermore, they allow for the computation of performance measures. The derivation of the so called k -th occurrence times is shown in detail.

For the entire collection see [[Zbl 0971.00028](#)].

MSC:

- 68Q85** Models and methods for concurrent and distributed computing (process algebras, bisimulation, transition nets, etc.)
- 68Q60** Specification and verification (program logics, model checking, etc.)

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