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Quantifying the dynamic behavior of process algebras. (English) Zbl 1007.68130

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, 184-199 (2001).

Summary: The paper introduces a new approach to define process algebras with quantified transitions. A mathematical model is introduced which allows the definition of various classes of process algebras including the well known models of untimed, probabilistic and stochastic process algebras. For this general mathematical model a bisimulation equivalence is defined and it is shown that the equivalence is a congruence according to the operations of the algebra. By means of some examples it is shown that the proposed approach allows the definition of new classes of process algebras like process algebras over the max/plus or min/plus semirings.

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.)

Cited in **2** Reviews
Cited in **10** Documents

Keywords:

[process algebras](#); [semiring](#); [bisimulation](#); [congruence](#)

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