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**An executable specification of asynchronous pi-calculus semantics and may testing in Maude 2.0.** (English) [Zbl 1272.68322](#)

Gadducci, Fabio (ed.) et al., WRLA 2002. Proceedings of the 4th international workshop on rewriting logic and its applications, Pisa, Italy, September 19–21, 2002. Amsterdam: Elsevier. Electronic Notes in Theoretical Computer Science 71, 261-281 (2004).

**Summary:** We describe an executable specification of the operational semantics of an asynchronous version of the  $\pi$ -calculus in Maude by means of conditional rewrite rules with rewrites in the conditions. We also present an executable specification of the may testing equivalence on non-recursive asynchronous  $\pi$ -calculus processes, using the Maude metalevel. Specifically, we describe our use of the `metaSearch` operation to both calculate the set of all finite traces of a non-recursive process, and to compare the trace sets of two processes according to a preorder relation that characterizes may testing in asynchronous  $\pi$ -calculus. Thus, in both the specification of the operational semantics and the may testing, we make heavy use of new features introduced in version 2.0 of the Maude language and system.

For the entire collection see [\[Zbl 1271.68038\]](#).

#### MSC:

- [68Q85](#) Models and methods for concurrent and distributed computing (process algebras, bisimulation, transition nets, etc.) Cited in 8 Documents
- [68Q55](#) Semantics in the theory of computing
- [68Q60](#) Specification and verification (program logics, model checking, etc.)

#### Software:

[ELAN](#); [Maude](#)

**Full Text:** [Link](#)

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