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Bisimulations for a calculus of broadcasting systems. (English) Zbl 0915.68065
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Summary: We develop a theory of bisimulation equivalence for the broadcast calculus CBS. Both the strong and weak versions of bisimulation congruence, we study are justified in terms of a characterization as the largest CBS congruences contained in an appropriate version of barbed bisimulation. We then present sound and complete proof systems for both the strong and weak congruences over finite terms. The first system we give contains an infinitary proof rule to accommodate input prefixes. We improve on this by presenting a finitary proof system where judgements are relative to properties of the data domain.

MSC:

- 68Q10** Modes of computation (nondeterministic, parallel, interactive, probabilistic, etc.)
68T15 Theorem proving (deduction, resolution, etc.) (MSC2010)

Cited in 11 Documents

Keywords:

broadcast calculus; bisimulation congruence; CBS

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