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Compositional Z: confluence proofs for permutative conversion. (English) Zbl 1368.03020

Stud. Log. 104, No. 6, 1205-1224 (2016).

The Z-theorem of *P. Dehorney* and *Z. van Oostrom* ["Proving confluence by monotonic single-step upper-bound functions", in: Logical models of reasoning and computation (LMRC-08) (2008)] allows the proof of confluence for a number of variants of the λ-calculus. In the current paper, the authors generalise this to a compositional Z-theorem, which is easily proved from the Z-theorem. The new theorem allows, in addition, proofs of confluence for λ-calculi corresponding to intuitionistic and classical natural deduction with disjunction and permutative conversions as well as a λ-calculus with explicit substitution.

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MSC:

03B40 Combinatory logic and lambda calculus

Keywords:

lambda calculus; lambda-mu calculus; confluence; permutative conversion

Full Text: DOI

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