Nakazawa, Koji; **Fujita, Ken-etsu**

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

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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.

Reviewer: Martin W. Bunder (Wollongong)

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