Problem #6 (Solved !)

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Summary: Is unicity of normal forms with respect to reduction *a modular property of left-linear term-rewriting systems?*

If R and S are two term-rewriting systems with disjoint vocabularies, such that for each of R and S any two convertible normal forms must be identical, then their union $R \cup S$ also enjoys this property [Mid89]. Accordingly, we say that unicity of normal forms (UN) is a "modular" property of term-rewriting systems. "Unicity of normal forms with respect to reduction" (UN$^\rightarrow$) is the weaker property that any two normal forms of the same term must be identical. For non-left-linear systems, this property is not modular. The question remains: Is $UN^\rightarrow$ a modular property of left-linear term-rewriting systems?

Remark

A positive solution is given in [Mar94].

Bibliography

[Mar94] M. Marchiori. Modularity of UN$^\rightarrow$ for left-linear term rewriting systems. Technical report, CWI, Amsterdam, 1994.

[Mid89] Aart Middeldorp. Modular aspects of properties of term rewriting systems related to normal forms. In Nachum Dershowitz, editor, *Rewriting Techniques and Applications*, volume 355 of *Lecture Notes in Computer Science*, pages 263–277, Chapel Hill, NC, USA, April 1989. Springer-Verlag.

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