

Problem #42 (Solved !)

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Summary: Can negations be effectively eliminated from first-order formulas over trees, where equality is the only predicate?

Given a first-order formula with equality as the only predicate symbol, can negation be effectively eliminated from an arbitrary formula ϕ when ϕ is equivalent to a positive formula? Equivalently, if ϕ has a finite complete set of unifiers, can they be computed? Special cases were solved in [Com88, LM87].

Remark

A positive solution is given in [Taj93].

Bibliography

- [Com88] Hubert Comon. *Unification et Disunification: Théorie et Applications*. PhD thesis, Institut National Polytechnique de Grenoble, 1988. In French.
- [LM87] J.-L. Lassez and K. G. Marriott. Explicit representation of terms defined by counter examples. *Journal of Automated Reasoning*, 3(3):1–17, September 1987.
- [Taj93] Mohamed Tajine. Negation elimination for syntactic equational formula. In Claude Kirchner, editor, *5th International Conference on Rewriting Techniques and Applications*, volume 690 of *Lecture Notes in Computer Science*, pages 316–327, Montreal, Canada, June 1993. Springer-Verlag.