Ghilardi, Silvio; **Sacchetti, Lorenzo**
Filtering unification and most general unifiers in modal logic. (English) ‖ Zbl 1069.03011
J. Symb. Log. 69, No. 3, 879-906 (2004).

The paper introduces a syntactic and an algebraic characterization of the normal K4 logics for which unification in an equational theory E is filtering (given two solutions to a unification problem, there is always another one which is more general than both of them). Firstly, it is proved that filtering unification in modal logic is characterized by the fact that finitely presented projective algebras are closed under binary products. Then, the case of normal extensions L of K4 is studied, showing that L has filtering unification if and only if it extends the logic K4.2$^+$ obtained from K4 by adding to it the modal translation of the weak excluded middle principle. In the rest of the paper, the authors prove that unification is indeed unitary in K4.2$^+$, and also in all extensions of it having the finite-model property and the 2-glueing property (this is a property of the finite frames, roughly saying that such frames are closed under disjoint union, adding a new root and identifying final clusters).

Reviewer: Manuel Ojeda Aciego (Malaga)

MSC:

03B45	Modal logic (including the logic of norms)
03B35	Mechanization of proofs and logical operations
03G25	Other algebras related to logic

Cited in **1** Review
Cited in **11** Documents

Keywords:

modal logic; E-unification; descriptive frames; projective algebras; filtering unification

Full Text: DOI

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