Exact Unification and Admissibility

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In this talk I will describe a new hierarchy of "exact" unification types, motivated by the study of admissible rules, where unifiers of identities in an equational class are preordered, not by instantiation, but rather by inclusion over the corresponding sets of unified identities. Minimal complete sets of unifiers under this new preordering always have a smaller or equal cardinality than those provided by the standard instantiation preordering, and I will give examples – distributive lattices, idempotent semigroups, and MV-algebras – where a dramatic improvement occurs. I will also explain the algebraic interpretation of exact unification, inspired by Ghilardi's algebraic approach to equational unification.