Unification in the Syntactic Category and Elementary Completion

Davide Trotta

Università di Trento

The unification problem was introduced by J. A. Robinson, and in the first order logic can be expressed as follows: given two terms find, if it exists, the simplest substitution which makes the two terms equal. Such a substitution is called most general unifier, and it is unique up to variable renaming. In this seminar we introduce the problem of unification and we explain how it can be stated in categorical terms using syntactic categories. In particular we see that the notion of most general unifier corresponds to a particular equalizer. We conclude showing some applications in categorical logic, such as the elementary and existential completion of a primary doctrine.

Keywords:

unifier • syntactic category • exact completion

"Obvious" is the most dangerous word in mathematics.
- Eric Temple Bell