

Title:

On Symbol Elimination in Theory Extensions and Applications

Abstract:

We present possibilities of symbol elimination in extensions of a theory T_0 with additional function symbols whose properties are axiomatised using a set of clauses. We analyze situations in which we can perform such tasks in a hierarchical way, relying on existing mechanisms for symbol elimination in T_0 . This is for instance possible if the base theory allows quantifier elimination. We analyze possibilities of extending such methods to situations in which the base theory does not allow quantifier elimination but has a model completion which does. We illustrate the method on various examples, and show how it can be used in the analysis of parametric systems (for synthesizing constraints on parameters and also for invariant synthesis).