Dependence logic and team semantics

Fan Yang

Department of Mathematics and Statistics, University of Helsinki, Finland
`fan.yang.c@gmail.com`

Dependence logic was introduced by Väänänen (2007) as a logical formalism for reasoning about dependence and independence relations. The logic adds to first-order logic a new type of atomic formulas, called dependence atoms, to specify explicitly the dependency between variables. Dependence logic adopts the team semantics of Hodges (1997). The basic idea of team semantics is that dependency properties can only manifest themselves in multitudes, and thus formulas of dependence logic are evaluated on a model with respect to sets of assignments (called teams) instead of single assignments (as in the usual Tarskian semantics).

In this talk, we survey some basic results for first-order and propositional dependence logic. We also discuss approaches to generalize team semantics and define propositional dependence logics based on intuitionistic and intermediate logics.