

Abstract

This thesis is about the distributive full Lambek calculus, i.e., intuitionistic logic without the structural rules of exchange, contraction and weakening and particularly about the two semantics of this logic, one of which is algebraic, the other one is a Kripke semantic. The two semantics are treated in separate chapters and some results about them are shown, for example the disjunction property is proven by amalgamation of Kripke models. The core of this thesis is nevertheless the relation of these two semantics, since it is interesting to study what do they have in common and how can they actually differ, both being a semantics of the same logic. We show how to translate frames to algebras and algebras to frames, and, moreover, we extend such translation to morphisms, thus constructing two functors between the two categories.

Key words: distributive FL logic, distributive full Lambek calculus, structural rules, distributive residuated lattice, Kripke frames, frame morphisms, category, functor