

Theory of Proofs, Categorical Semantics and Non-Free Categories.

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Abstract

The following topics are treated: categorical structures on logical calculi; sequential calculus $L(A)$ for Intuitionistic Multiplicative Linear Logic (IMLL) and Symmetric Monoidal Closed Categories (SMCC); interpretations of logical calculi in categorical models; axiomatizations (identities represented by commutative diagrams) and varieties of categories; axiomatization by “critical pairs” in case of SMCC; concrete models (more or less exotic: semimodules over semirings, finite pointed sets, game-theoretic models); the Triple-Dual Conjecture; intermediate categorical equivalences on $L(A)$; proof-theoretical methods applied to the study of arbitrary natural transformations.

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