

LOGIKSEMINARIET STOCKHOLM–UPPSALA

Benno van den Berg

Sheaves for predicative toposes

The categorical concept of a topos has proved its usefulness for the metamathematical study of intuitionistic formal systems. Topos theory has led to elegant proofs of various metamathematical results (independence and consistency results, derived rules). Many of them depend on the stability of toposes under taking sheaves for an internal site.

For studying formal systems that are also predicative, like Martin-Löf Type Theory, the notion of a topos is not that suitable, because of its inherently impredicative nature. This led Ieke Moerdijk and Erik Palmgren to define the notion of a predicative topos: they initiated the program of developing the theory of predicative toposes with the purpose of finding applications similar to those of topos theory. In this talk, I will explain why the categorical concept of a predicative topos is a natural one from a type-theoretic perspective and discuss the question whether they are stable under taking sheaves.

Onsdag 13 april kl. 13.15–15.00, sal 3513,
MIC, Polacksbacken, Uppsala.

Johan Granström

Meta-variables in dependent type theory

In an implementation of type theory, meta-variables can be used to type check incomplete expressions (proofs) as well as for polymorphism in the form of implicit arguments. A formal theory of meta-variables is presented along with background and applications.

Onsdag 13 april kl. 15.15–17.00, sal 2215,
MIC, Polacksbacken, Uppsala.

<http://www.math.su.se/~jesper/seminarier/>