

Logikseminariet Stockholm–Uppsala

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**Non-standard reductions in typed λ -calculus
with inductive types and normalization properties**

One of well known difficulties encountered in the applications of proof-assistants based on type theory is that many equalities that a user expects for granted are satisfied only extensionally (not supported by reduction mechanisms). We study some reductions that may be added preserving SN and CR property and “transform” certain useful equalities into intensional w.r.t. the extended system. (For example, invertibility of some functions.) Main results concern simply typed λ -calculus with inductive types. We consider isomorphisms between copies of inductive types, products, finite types. The problem of functoriality of a schema of an inductive type with parameters is studied. Some possibilities of generalization to the systems with dependent types are considered.

The talk is based on joint work with D. Chemouil (former ph.d. student) and F. Barral (ph.d. in progress).

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sal 12167, Ångströmlaboratoriet, Uppsala.

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