



Mês de: Outubro 2009

SEMINÁRIO DE LÓGICA MATEMÁTICA

Dia 1 de Outubro, às 18h00 - IST Room 3-10

“Consistency of Strictly Impredicative NF”

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Abstract:

An instance of Stratified Comprehension $\forall x_1 \dots \forall x_n \exists y \forall x (x \text{ in } y \leftrightarrow \phi(x, x_1, \dots, x_n))$ is called **strictly impredicative** iff, under minimal stratification, the type of ϕ is 0 . Using the technology of forcing, we prove that the fragment of NF based on strictly impredicative Stratified Comprehension is consistent. A crucial part in this proof, namely showing genericity of a certain symmetric filter, is due to Robert Solovay. As a bonus, our interpretation also satisfies some instances of Stratified Comprehension which are **not** strictly impredicative. For example, it verifies existence of Frege natural numbers. Apparently, this is a new subsystem of NF shown to be consistent. The consistency question for the whole theory NF remains open (since 1937). The complete paper is available at <http://www.cs.ioc.ee/~sergei/NFSI.pdf>. This is a repeat of the talk given at Tarde de Lógica <http://www.ciul.ul.pt/~logicmat/lgwebaferlog.html> on July 2, but now it will extend to 2 sessions (October 1 and 8) and I can go slower. For later, tentatively we plan another my presentation at SLM, about a different approach to tackle this problem, using properties of Intuitionistic Set Theories and Intuitionistic Mathematics.

Local:

COMPLEXO INTERDISCIPLINAR

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