



Mês de: DEZEMBRO 2012

SEMINÁRIO DE LÓGICA MATEMÁTICA

Dia 13 de Dezembro (quinta-feira), às 17h, na Sala B3-01

Krivine's classical realisability and the unprovability of the axiom of choice and the continuum hypothesis

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Abstract:

Proof interpretations are tools in mathematical logic with a wide range of applications: consistency results, independence results, and extraction of computational content from proofs, just to name a few. They are usually applied only in the context of logic or arithmetic. There is the dream of applying them to full set theory. Now the dream is fulfilled with a novel proof interpretation: Krivine's classical realisability.

In this talk I present my personal digest of Krivine's classical realisability and one of its main applications to set theory: set theory ZF plus the statement "there is a set between \mathbb{N} (the set of natural numbers) and \mathbb{R} (the set of real numbers) not equinumerous to its cartesian square" is a consistent theory where both the axiom of choice and the continuum hypothesis fail. As a corollary we get two classical and celebrated results: ZF does not prove the axiom of choice nor the continuum hypothesis.

This is a simple, short and sweet talk, focusing on the ideas and setting aside technicalities.

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