17. Dezember 2018, 15:15 – 16:45
Universität Konstanz, Raum F 426

Non-Standard Models of Peano Arithmetic and Real Algebra

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Abstract:

Gödel's celebrated incompleteness theorem has triggered great interest in the study of fragments of Peano arithmetic in general, and in particular in describing explicitly their non-standard models. Gödel's completeness theorem allows to test the first order deductive closure of these fragments.

In this talk, I will first (heuristically) explain the content of these two core theorems of mathematical logic, and then the interrelation between models of arithmetic on the one hand and real algebraic constructions on the other.