
BERN-FRIBOURG GRADUATE SEMINAR

a seminar for Master and PhD students

Thursday 7th December, 2023: 17:15 - 18:00

Room 2.52, Perolles 08, Fribourg

STÉPHANE DESARZENS

University of Bern

Gödel's Incompleteness Theorems

Abstract

In this talk I'd like to introduce non-logicians to Gödel's incompleteness theorems. A first-order theory whose axioms are computable cannot simultaneously extend Peano arithmetic, be consistent and be complete. And two consistent theories which extend Peano arithmetic cannot prove the consistency of each other.

These results have greatly influenced research in logic during the last century. They forced focus to shift from the consistency of theories to the relative consistency of theories.

Tools like the Gödel numbering which encodes logical formulas as natural numbers or the diagonal argument have been important in logic and the theory of computability.