

Existential NIP Formulas in Valued Fields of Positive Characteristic

Paulo Soto Moreno

CIRM, April 2026

Abstract

In this talk we will introduce the study of fragments of NIP formulas in some theories of valued fields. In particular, building on a celebrated theorem of Johnson that states that any NIP valued field of positive characteristic is necessarily henselian, we show that the same is true when restricting the family of NIP formulas to the existential fragment. This motivates the study of the so-called E-NIP theories, for which we obtain an Ax–Kochen–Ershov-like characterisation in the equal characteristic case, conditional to a multi-variable generalization of a well-known statement about indiscernible sequences in ac-valued fields.