Model theory of henselian valued fields: definability and connections to pure model theory

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Research - background and outlook

Research focus

- ▶ Definability of valuations in the henselian realm
- ▶ Interplay between pure/combinatorial model theory and algebraic properties of fields (Shelah's conjecture)

Goals for the MSRI semester

- ▶ NIP henselian valued fields
  ⤳relative decidability in NIP henselian valued fields
  ⤳Johnson's proof of the Shelah conjecture for dp finite fields
- ▶ Model theoretic and algebraic implications of p-henselianity
- ▶ Model theory of unramified and finitely ramified henselian valued fields
  ⤳relative ($\exists$-)decidability
  ⤳applications of AKE for imperfect residue fields
- ▶ Chance collaboration: Local fields in continuous logic?