DVR 0065528

Workshop 3 on "Reverse Mathematics: Beyond Logic."

of the Thematic Programme "Reverse Mathematics"

August 25 - 29, 2025

organized by

Juan Aguilera (TU Vienna), Linda Brown Westrick (Penn State U), Noam Greenberg (Victoria U of Wellington), Denis Hirschfeldt (U of Chicago)

- **Monday, August 25th, 2025**

  09:00 – 10:00 **Registration & Welcome**

  10:00 – 11:00 **David Fernández-Duque (U of Barcelona)**
  The fractal Goodstein principle

  11:00 – 11:30 **Coffee Break**

  11:30 – 12:30 **Miguel Aguilar (TU Wien)**
  The Reverse Mathematics of the Mountain Pass Theorem

  12:30 – 14:30 **Lunch Break**

  14:30 – 15:30 **Aristotelis Panagiotopoulos (U of Vienna)**
  Incompleteness theorems for observables in general relativity

  15:30 – 15:50 **Coffee Break**

  15:50 – 16:50 **Alberto Marcone (U of Udine)**
  The barrier Ramsey theorem

- **Tuesday, August 26th, 2025**

  10:00 – 11:00 **Ulrich Kohlenbach (TU Darmstadt)**
  Logical analysis of proofs in non-smooth optimization using set-valued monotone operators

  11:00 – 11:30 **Coffee Break**

  11:30 – 12:30 **Miguel Aguilar (TU Wien)**
  The Reverse Mathematics of the Mountain Pass Theorem (Part II)

  12:30 – 17:00 **Discussions (free afternoon)**

- **Wednesday, August 27th, 2025**

  10:00 – 11:00 **Giovanni Soldà (Ghent U)**
  Nash-Williams theorem for sequences of finite range in ATR0

  11:00 – 11:30 **Coffee Break**

  11:30 – 12:30 **Fedor Pakhomov (Ghent U)**
  Higman's lemma for bqo's is provable in ATR0

  12:30 – 14:30 **Lunch Break**

  14:30 – 15:30 **Andreas Weiermann (Ghent U)**

How to treat Goodstein sequences via well partial orders.

15:30 – 15:50 **Coffee Break**

15:50 – 16:30 **Five-minute afternoon talks**
Speakers TBA

- **Thursday, August 28th, 2025**

  11:00 – 11:30 **Coffee Break**

  11:30 – 12:30 **Lorenzo Carlucci (U Roma 1)**
  Reductions of well-ordering principles to Ramsey-type and Hindman-type theorems

  12:30 – 15:00 **Lunch Break/Discussions**

  15:00 – 16:00 **Harvey Friedman**
  Strict Reverse Mathematics - part IIINote: this talk will be held online.

- **Friday, August 29th, 2025**

  10:00 – 17:00 **Discussions (free)**

All talks take place at ESI Boltzmann Lecture Hall!