Seminar zur Mengelehre: Measurable Cardinals and Determinacy

Wintersemester 2005-2006, Blockseminar

Time and Placce: February 11 and 12 2006. Amsterdam.
Dozenten: Prof. Peter Koepke, Dr. Benedikt Löwe.
Betreuer: Ioanna Dimitriou.
Literature: Akihiro Kanamori - *The Higher Infinite* and A.S. Kechris - *Classical Descriptive Set Theory.*

1. **Game Theory** (Andreas Müller)

   Definition of Game, Winning Strategy, Determinacy. Gale Stewart Theorem. AC and AD together are inconsistent. p.369-372

2. **Determinacy and Regularity Properties** (Michael Klein and Christian Reiher)

   first talk: Definition Baire property and basics: (p.47-48 in Kechris' book), AD implies Baire property (Kanamori p.373-374), AD implies perfect set property (Kanamori p.374-375).

   second talk: Definition of Lebesgue measure on Baire Space, AD implies Lebesgue measurability (Kanamori p.376), Tony Martin's alternative proof of Lebesgue measurability:
   (`http://seminariomatematico.dm.unito.it/rendiconti/61-4/393.pdf`)

3. **Descriptive Set Theory** (Manuel Peelen and Benjamin Seyfferth)

   Definition of the classes of $\mathbf{\Sigma}^1_1$ and $\mathbf{\Pi}^1_1$ sets, Coding $\mathbf{\Pi}^1_1$ sets by trees, the Kleene-Brouwer ordering. p.152-162

4. **Determinacy from measurability** (Merlin Carl and Dominik Klein)

   $\mathbf{\Pi}^1_1$-Determinacy from a measurable cardinal p.437-439