

Workshop III: The Kakeya Problem, Restriction Problem, and Sum-product Theory

Monday May 5, 2014

- 8:00–8:55 *Check-In/Light Breakfast (Hosted by IPAM)*
- 8:55–9:00 *Welcome and Opening Remarks*
- 9:00–9:50 **Ana Vargas** (Autonomous University of Madrid)
Restriction Theorems for Some surfaces of Finite Type
- 10:00–10:30 *Break*
- 10:30–11:20 **Larry Guth** (Massachusetts Institute of Technology)
From incidence geometry of lines towards incidence geometry of tubes.
- 11:30–1:30 *Lunch (on your own)*
- 1:30–2:20 **Michael Christ** (University of California, Berkeley (UC Berkeley))
A Sharpened Hausdorff-Young Inequality
- 2:30–2:45 *Break*
- 2:45–3:35 **Betsy Stovall** (University of Wisconsin-Madison)
Uniform estimates for Fourier restriction to polynomial curves
- 3:45–4:00 *Break*
- 4:00–4:50 **Tuomas Orponen** (University of Edinburgh)
On restricted families of projections
- 5:00–6:30 *Poster Session & Reception (Hosted by IPAM)*

Tuesday May 6, 2014

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:50 **Ciprian Demeter** (Indiana University)
Proof of the l^2 decoupling conjecture
- 10:00–10:30 *Break*

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- 10:30–11:20 **Alexei Poltoratski** (Texas A&M University - College Station)
Gaps and Oscillations in Fourier Analysis
- 11:30–1:30 *Lunch (on your own)*
- 1:30–2:20 **Terence Tao** (University of California, Los Angeles (UCLA))
Stickiness, graininess, planiness, and a sum-product approach to the Kakeya problem
- 2:30–2:45 *Break*
- 2:45–3:35 **Philip Gressman** (University of Pennsylvania)
 L^p -Improving Estimates and Restriction in Intermediate Dimensions
- 3:45–4:00 *Break*
- 4:00–4:50 **Malabika Pramanik** (University of British Columbia)
Lacunarity, Kakeya-type sets and directional maximal operators

Wednesday May 7, 2014

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:50 **Andreas Seeger** (University of Wisconsin-Madison)
Problems related to the Stein-Tomas theorem
- 10:00–10:30 *Break*
- 10:30–11:20 **Jonathan Pakianathan** (University of Rochester)
Group actions and Geometric Combinatorics in Finite Fields
- 11:30–1:30 *Lunch (on your own)*

Thursday May 8, 2014

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:50 *Problem Session*
- 10:00–10:30 *Break*

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- 10:30–11:20 **Richard Oberlin** (Florida State University)
Unit Distance Problems
- 11:30–1:30 *Lunch (on your own)*
- 1:30–2:20 **Joshua Zahl** (Massachusetts Institute of Technology)
Visibility and discretized projection theorems
- 2:30–2:45 *Break*
- 2:45–3:35 **Sanghyuk Lee** (Seoul National University)
Sharp square function estimates for the Bochner-Riesz means
- 3:45–4:00 *Break*
- 4:00–4:50 **Jonathan Bennett** (University of Birmingham)
Flow monotonicity and Strichartz inequalities

Friday May 9, 2014

- 8:00–9:00 *Continental Breakfast*
- 9:00–9:50 **Zeev Dvir** (Princeton University)
Factors of sparse polynomials are sparse
- 10:00–10:30 *Break*
- 10:30–11:20 **Michael Bateman** (University of Cambridge)
Inverse 2D Kakeya theorems
- 11:30–1:30 *Lunch (on your own)*
- 1:30–2:20 **Pertti Mattila** (University of Helsinki)
Projection and slicing theorems in Heisenberg groups
- 2:30–2:45 *Break*
- 2:45–3:35 **Tony Carbery** (University of Edinburgh)
Colouring multijoints
- 3:45–4:00 *Break*
- 4:00–4:50 **Misha Rudnev** (University of Bristol)
Some new sum-product inequalities, over C

