

## Calculus of Variations in Probability and Geometry

Monday February 7, 2022

- 8:00      *SESSION CHAIR: Alina Stancu (Concordia University)*
- 8:00–8:55      *Check-In/Light Breakfast (Hosted by IPAM)*
- 8:55–9:00      *Welcome & Opening Remarks: Dean Miguel García-Garibay (Dean of Physical Sciences, UCLA) and Dima Shlyakhtenko (Director, IPAM)*
- 9:15–9:40      **Bo'az Klartag** (Weizmann Institute of Science)  
*Virtual Talk: Size of line intersections in high dimensional  $L_p$ -balls and product measures*
- 9:50–10:15      **Karoly Boroczky** (Renyi Institute of Mathematics)  
*Virtual Talk: Equality in the Reverse Brascamp Lieb Inequality*
- 10:25–10:40      *Break*
- 10:40–11:05      **Guofang Wei** (University of California, Santa Barbara (UCSB))  
*Virtual Talk: Fundamental Gap Estimate for Convex Domains*
- 11:15–11:40      **Grigorios Paouris** (Texas A&M University - College Station)  
*Virtual Talk: Empirical Isoperimetric Inequalities outside convexity*
- 11:50–12:05      *Break*
- 12:05–12:30      **Orli Herscovici** (Georgia Institute of Technology)  
*Adaptation of Kohler-Jobin rearrangement technique with fixed torsional rigidity to the Gaussian space*
- 12:40–12:55      *Lightning Poster Presentations*
- 12:55–1:15      *In-Person Poster Session*
- 1:00–3:00      *Lunch (Hosted by IPAM)*
- 3:00–4:30      *In-Person Collaborative Discussions*



## Tuesday February 8, 2022

- 8:00      *SESSION CHAIR: Elisabeth Werner (Case Western Reserve University)*
- 8:00–9:00      *Check-In/Light Breakfast (Hosted by IPAM)*
- 9:00–9:25      **Liran Rotem** (Technion - Israel Institute of Technology)  
*Virtual Talk: Spectral inequalities for rotation invariant measures*
- 9:35–10:00      **Shay Sadovsky** (Tel Aviv University)  
*Virtual Talk: Involutions and costs: A zoo of dualities*
- 10:10–10:25      *Break*
- 10:25–10:50      **Alessio Figalli** (ETH Zurich)  
*Virtual Talk: Quantitative Stability in Geometric and Functional Inequalities*
- 11:00–11:25      **Galyna Livshyts** (Georgia Institute of Technology)  
*Virtual Talk: On a conjectural symmetric version of the Ehrhard inequality*
- 11:35–11:50      *Break*
- 11:50–12:15      **Dima Ryabogin** (Kent State University)  
*On Ulam's Problem 19 and related problems*
- 12:25–12:50      **Tobias Colding** (Massachusetts Institute of Technology)  
*Virtual Talk: "Singularities and diffeomorphism"*
- 1:15–3:00      *Lunch (Hosted by IPAM)*
- 3:00–4:30      *In-Person Collaborative Discussions*

## Wednesday February 9, 2022

- 8:00      *SESSION CHAIR: Orli Herscovici (Georgia Institute of Technology)*
- 8:00–9:00      *Check-In/Light Breakfast (Hosted by IPAM)*
- 9:00–9:25      **Emanuel Milman** (Technion - Israel Institute of Technology)  
*Virtual Talk: The log-Minkowski Problem*
- 9:35–10:00      **Barbara Brandolini** (Università degli Studi di Palermo)  
*Virtual Talk: Eigenvalue estimates for  $p$ -Laplace problems on domains expressed in Fermi Coordinates*
- 10:10–10:25      *Break*

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- 10:25–10:50 **Han Huang** (Georgia Institute of Technology)  
*Virtual Talk: When can we recover an Erdos-Renyi graph from its local structure?*
- 11:00–11:25 **Lu Wang** (Yale University)  
*Virtual Talk: Topological properties of hypersurfaces with low entropy*
- 11:35–11:50 *Break*
- 11:50–12:15 **Yair Shenfeld** (Massachusetts Institute of Technology)  
*Virtual Talk: The Brownian transport map*
- 12:25–12:50 **Jacob Bernstein** (Johns Hopkins University)  
*Virtual Talk: Entropy and  $C^0$  stability of hypersurfaces*
- 1:00–3:00 *Lunch (Hosted by IPAM)*
- 3:00–4:30 *In-Person Open Problems Session*

### Thursday February 10, 2022

- 8:00 *SESSION CHAIR: Umut Caglar (Florida International University)*
- 8:00–9:00 *Check-In/Light Breakfast (Hosted by IPAM)*
- 9:00–9:25 **Eugenia Saorín Gómez** (Universität Bremen)  
*Virtual Talk: Inner parallel bodies & the Isoperimetric Quotient*
- 9:35–10:00 **Matthieu Fradelizi** (Université Gustave Eiffel)  
*Virtual Talk: Volume of  $p$ -zonoids and inequalities for determinants*
- 10:10–10:25 *Break*
- 10:25–10:50 **Santosh Vempala** (Georgia Institute of Technology)  
*Virtual Talk: Gibbs Sampling for Convex Bodies and an  $L_0$  Isoperimetric Inequality*
- 11:00–11:25 **Paata Ivanisvili** (University of California, Irvine (UCI))  
*Virtual Talk: Learning low degree functions in logarithmic number of random queries.*
- 11:35–11:50 *Break*
- 11:50–12:15 **Joe Neeman** (University of Texas at Austin)  
*Virtual Talk: Large deviations for triangle densities*
- 12:25–12:50 **Jonathan J. Zhu** (Princeton University)  
*Waists, widths and symplectic embeddings*
- 1:00–3:00 *Lunch (Hosted by IPAM)*
- 3:00–4:30 *In-Person Collaborative Discussions*

## Friday February 11, 2022

- 8:00 *SESSION CHAIR: Dima Ryabogin (Kent State University)*
- 8:00–9:00 *Check-In/Light Breakfast (Hosted by IPAM)*
- 9:00–9:25 **Francesco Chiacchio** (Università di Napoli “Federico II”)  
*Virtual Talk: A class of isoperimetric problems with double density and applications*
- 9:35–10:00 **Maria Gordina** (University of Connecticut)  
*Virtual Talk: Large deviations principle for sub-Riemannian random walks on Carnot groups*
- 10:10–10:25 *Break*
- 10:25–10:50 **Assaf Naor** (Princeton University)  
*Virtual Talk: Extension, separation and isomorphic reverse isoperimetry*
- 11:00–11:25 **Steven Heilman** (University of Southern California (USC))  
*Variational Proofs of Isoperimetric Inequalities*
- 11:35–12:45 *Lunch (Hosted by IPAM)*

