

Rutgers University
Hill Center - Room 705

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The Rigidity Problem for Symmetrization Inequalities

Abstract

Necessary conditions for equality cases in symmetrization inequalities are usually exploited – in combination with additional arguments – to deduce symmetry properties of minimizers in geometric variational problems. Additional arguments are needed as, in general, a set or a function may be an equality case for a given symmetrization inequality without being itself symmetric. Sufficient conditions for equality cases to enjoy natural symmetry properties have been obtained by Brothers and Ziemer in the case of Polya-Szego type inequalities, and by Chlebik, Cianchi and Fusco in the case of Steiner symmetrization inequality. In this seminar, we shall present several characterization results for rigidity of equality cases in Steiner symmetrization inequality for Euclidean perimeter, and in Ehrhard symmetrization inequality for Gaussian perimeter. The talk is based on joint works with Filippo Cagnetti (U. Sussex), Maria Colombo (SNS Pisa) and Guido De Philippis (U. Bonn).