
Geometric Problems in PDEs
Problèmes géométriques pour les EDP
(Org: **Lia Bronsard** and/et **Kenneth DeMason** (McMaster University))

ALMUT BURCHARD, University of Toronto

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COLIN GRANT, McMaster, MSc student

PENGFEI GUAN, McGill University
An inverse-curvature-type hypersurface flow in space forms

We study an inverse-curvature-flow in hyperbolic space and the hemisphere. We introduce explicit initial radial-slope conditions under which smooth admissible star-shaped hypersurfaces evolve for all time and converge exponentially to a geodesic sphere. These first-order conditions are compatible with nonconvex admissible hypersurfaces and are implied by the corresponding horo-convexity assumptions for radial graphs. The monotonicity of quermassintegrals along the flow yields sharp geometric inequalities, with equality precisely for geodesic spheres. This is a joint work with Junfang Li.

FANG HONG, McGill University

LUANA JOST, Institut de Mathématiques de Toulouse

SIYUAN LU, McMaster University
Recent progress on Hessian quotient equations

Hessian quotient equations are closely related to convex geometry, complex geometry and special Lagrangian geometry. In this talk, I will discuss some recent progress on Hessian quotient equations from analytic point of view, including rigidity of entire solutions and a priori estimates.

GUANYING PENG, Worcester Polytechnic Institute

RÉMY RODIAC, Université Côte d'Azur

REGINA ROTMAN, University of Toronto

ALINA STANCU, Concordia University

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