Shape Optimization and Isoperimetric and Functional Inequalities

November 21 - 25, 2016

Monday, November 21

9:00 Welcome

9:15-9:55 M. Ashbaugh A Sharp Lower Bound for the First Eigenvalue of the Vibrating Clamped Plate under Compression

10:00-10:30 Break

10:30-11:10 P. Freitas Asymptotic behaviour of optimisers of Laplace eigenvalues

11:15-11:55 M. Van den Berg On Polya?s inequality for torsional rigidity and first Dirichlet eigenvalue

12:00-12:20 A. Giacomini Shape optimization with Robin conditions and free discontinuity problems

Lunch

16:00-16:40 G. Dal Maso Existence and uniqueness of dynamic evolutions for a peeling test in dimension one

16:45-17:05 D. Krejcirik Isoperimetric versus isochoric spectral optimisation for the Robin problem

17:10-17:30 Break

17:30-17:50 K. Gittins Asymptotic optimal sets for the eigenvalues of the Laplacian

17:55-18 :15 C. Bianchini Wulff Shape characterization for anisotropic capacitary potentials

Tuesday, November 22

8:30-9:10 N. Fusco A stability result for the first eigenvalue of the p-Laplacian

9:15-9:55 F. Morgan Isoperimetry with Density

10:00-10:30 Break

10:30-11:10 G. De Philippis Allard's rectifiability theorem for anisotropic energies

11:15-11:55 R. Laugesen Optimal stretching for lattice points and eigenvalues

12:00-12:20 A. Girouard Discretization and Steklov eigenvalues of compact manifold with boundary

Lunch

16:00-16:40 F. Gazzola A minimaxmax problem for improving the torsional stability of rectangular plates

16:45-17:05 K. Stollenwerk Optimal shape of a domain which minimizes the buckling load of a clamped plate

17:10-17:30 Break

17:30-17:50 J. Lamboley Regularity for functionals involving perimeter

17:55-18 :15 G. Croce On the selection of solutions to a nonlinear PDE system

Wednesday, November 21

8:30-9:10 B. Colbois Bounds for the spectrum of the magnetic Laplacian
9:15-9:55 I. Polterovich Nodal geometry of Steklov eigenfunctions
10:00-10:30 Break
10:30-11:10 I. Fragala Some new inequalities for the Cheeger constant
11:15-11:55 N. Nadirashvili Isoperimetric inequalities for spectrum of Laplacian on surfaces
12:00-12:20 V. Bonnaillie-Noël Spectral minimal partitions for a family of tori
Lunch
Free afternoon

Thursday, November 23

8:30-9:10 R. Benguria The Brezis-Nirenberg Problem for the Laplacian with a singular drift in $\mathbb{R}^n$ and also in $\mathbb{S}^n$
9:15-9:55 C. Bandle and A. Wagner On an eigenvalue problem with infinitely many positive and negative eigenvalues: Rayleigh-Faber-Krahn inequalities for the principal eigenvalues
10:00-10:30 Break
10:30-11:10 C. Trombetti On the Stability of the Bossel-Daners Inequality
11:15-11:55 P. Salani About the stability of Borell-Brascamp-Lieb inequalities
12:00-12:20 C. Nitsch Symmetry breaking for a problem in optimal insulation
Lunch
16:00-16:40 S. Terracini Regularity of the optimal sets for spectral functionals Part I: sum of eigenvalues
16:45-17:05 D. Mazzoleni Regularity of the optimal sets for spectral functionals Part II, some generalizations
17:10-17:30 Break
17:30-17:50 Y. Privat Geometrical properties of resources optimal arrangements for species survival
17:55-18 :15 B. Velichkov An epi-perimetric inequality approach to the regularity of the free boundaries

Friday, November 24

8:30-9:10 B. Kawohl Two dimensions are easier
9:15-9:55 J. Arrieta Thin domains with a locally periodic highly oscillatory boundary
10:00-10:30 Break
10:30-10:50 M. Dambrine Taking uncertainties into account in numerical shape optimization
10:55-11:15 E. Oudet Convex relaxation and variational approximation of the Euclidean Steiner
11:20-11 :40 F. Brock Some isoperimetric inequalities on $\mathbb{R}^N$ with respect to weights $|x|^\alpha$