Programme on

„Minimal Energy Point Sets, Lattices and Designs"
September 29 - November 21, 2014:

organized by

Christine Bachoc (U Bordeaux), Peter Grabner (Graz U of Technology),
Edward B. Saff (Vanderbilt U, Nashville), Achill Schürmann (U Rostock)

Workshop on

„Optimal Point Configurations and Applications"

October 13 - 17, 2014:

- **Monday, October 13, 2014**

  09:00 – 09:30 **Opening & Registration**

  09:30 – 10:30 **Ian Sloan**
  QMC designs and covering of spheres by spherical caps

  10:30 – 11:00 **coffee break**

  11:00 – 11:30 **Johann Brauchart**
  Covering and Separation for points on the sphere

  11:30 – 12:00 **Jordi Marzo**
  Uniformly bounded sets of orthonormal polynomials on the sphere

  12:00 – 12:30 **Braxton Osting**
  Spectrally Optimized Point Set Configurations

  12:30 – 15:00 *lunch break*

  15:00 – 16:00 **Salvatore Torquato**
  Disordered Energy Minimizing Configurations

  16:00 – 16:30 **coffee break**

  16:30 – 17:00 **Emmanuel Trizac**
  The Wigner Crystal problem for charged bilayers

  17:00 – 17:30 **Ladislav Šamaj**
  Ground-state of charged particles between the walls with dielectric images

  17:30 – 18:00 **Moritz Antlanger**
  The asymmetric Wigner bilayer problem

- **Tuesday, October 14, 2014**

  09:00 – 10:00 **Peter Dragnev**
  Universal lower bounds for potential energy of spherical codes

  10:00 – 10:30 *coffee break*

  10:30 – 11:00 **Carlos Beltrán**
  Optimal distribution of heat sources in the sphere

  11:00 – 11:30 **Paul Leopardi**
  Discrepancy, separation and Riesz energy of finite point sets on compact connected Riemannian manifolds

  11:30 – 12:00 **Kenneth Stolarsky**
  Thinking Outside the Circle

  12:00 – 15:00 *lunch break*

  15:00 – 16:00 **Sylvia Serfaty**
  Next order asymptotics of large systems with Coulomb and Riesz interactions

  16:00 – 16:30 *coffee break*

  16:30 – 17:00 **Laurent Bétermin**
  Asymptotic expansion of logarithmic energy on the sphere

  17:00 – 17:30 **Brian Simanek**
  Periodic Discrete Energy

  17:30 – 18:00 **Yujian Su**
  The Next-order Term for Minimal Periodic Riesz Energy Asymptotics

- **Wednesday, October 15, 2014**

  09:00 – 10:00 **Josef Dick**
  Numerical integration on the sphere using quasi-Monte Carlos rules

  10:00 – 10:30 *coffee break*

  10:30 – 11:00 **Dmitriy Bilyk**
  The L^2 discrepancy of Fibonacci (and other) lattices

  11:00 – 11:30 **Lev Markhasin**
  BMO and exponential Orlicz space estimates of the discrepancy function in arbitrary dimension

  11:30 – 12:00 **Mario Ullrich**
  Frolov cubature in Besov spaces with mixed smoothness

  12:00 – 13:00 **Henry Cohn**
  Optimal simplices and codes in projective spaces

- **Thursday, October 16, 2014**

  09:00 – 10:00 **Joe Ward**
  Local Bases on Spheres with Applications

  10:00 – 10:30 *coffee break*

  10:30 – 11:00 **Francis Narcowich**
  A Zeros Lemma for Riemannian Manifolds

  11:00 – 11:30 **Yuguang Wang**
  Computation of isotropic random fields on spheres via needlets decomposition

11:30 – 12:00 **Khang Tran**
The root distribution of polynomials with a three-term recurrence

12:00 – 15:00 *lunch break*

15:00 – 16:00 **Florian Theil**
Periodic minimizers in three dimensions

16:00 – 16:30 *coffee break*

16:30 – 17:00 **David de Laat**
Energy minimization via moment hierachies

17:00 – 17:30 **Paolo Piovano**
Wulff shape and isoperimetric characterization of crystals

17:30 – 18:00 **Dmitriy Khavinson**
Selected question for polynomials in one and several complex variables

- **Friday, October 17, 2014**

  09:00 – 10:00 **Sergiy Borodachov**
  Asymptotic Results on the Discrete Riesz Minimal Energy and Polarization Problems when the Power of the Potential Equals the Dimension of the Conductor

  10:00 – 10:30 *coffee break*

  10:30 – 11:00 **Natalia Zorii**
  Minimum Riesz energy problems for a condenser with „touching plates"

  11:00 – 11:30 **Robert Kusner**
  Mbius energy of Hopf lins in S^3 and Coulomb electrons on S^2

  11:30 – 12:00 **Ulisse Stefanelli**
  Carbon geometries as optimal configurations

  12:00 – 12:30 **Wei-Hsuan Yu**
  Two-distance tight frames

All talks take place at the ESI, Boltzmann Lecture Hall