The Interaction of Geometry and Representation Theory. Exploring new frontiers

September 3 - 14, 2012

Schedule for week 2: September 10 - 14

Organized by: Andreas Cap, Alan Carey, A. Rod Gover, C. Robin Graham, and Jan Slovak

- **Monday, September 10, 2012**
  09:00 Welcome and joint registration
  09:30 – 10:20: Claude LeBrun, SUNY, Stony Brook, USA
  Instantons, Quotient Singularities, and the Geometrization of 4-Manifolds
  10:20 – 10:50: coffee break
  10:50 – 11:40: Ronny O. Wells, Jacobs University, Bremen, Germany
  Manifolds and Euclidean Space
  11:50 – 12:40: Justin Sawon, Univ. North Carolina, USA
  Twistor theory for generalized complex manifolds
  12:40 – 14:30: lunch break
  14:30 – 15:20: Simon Gindikin, Rutgers Univ., USA
  Twistors and representations. 25 years after
  15:20 – 15:50: break
  15:50 – 16:40: Lionel Mason, Oxford Univ., UK
  Einstein gravity from rational curves in twistor space
  16:50 – 17:40: Andrea D'Agnolo, Univ. Padova, Italy
  On the Laplace transform for temperate holomorphic functions

- **Tuesday, September 11, 2012**
  09:30 – 10:20: Toshiyuki Kobayashi, University of Tokyo, Japan
  Intertwining operators in parabolic geometry and branching laws
  10:20 – 10:50: coffee break
  10:50 – 11:40: Bent Ørsted, Univ. of Aarhus, Denmark
  Natural differential operators in parabolic geometry and branching laws
  11:50 – 12:40: Joseph A. Wolf, Univ. California, Berkeley, USA
  Principal series representations for some infinite dimensional Lie groups
  12:40 – 14:30: lunch break
  14:30 – 15:20: C. Robin Graham, Univ. of Washington, USA
  New proof of Juhl's formulae for GJMS operators and Q-curvatures
  15:20 – 15:50: break
  15:50 – 16:40: Andreas Juhl, Univ. Uppsala, Sweden
  On the structure of GJMS-operators and Q-curvatures
  16:50 – 17:40: A. Rod Gover, Univ. Auckland, New Zealand
  Riemannian geometry in the parabolic playground

- **Wednesday, September 12, 2012**
  09:30 – 10:20: Robert L. Bryant, MSRI Berkeley, USA
  On normal forms for Pfaffian systems and their application
  10:20 – 10:50: coffee break
  10:50 – 11:40: Vladimir Matveev, Univ. Jena, Germany
  Degree of mobility of metrics with respect to projective and h-projective equivalence
  11:50 – 12:40: David M.J. Calderbank, Univ. Bath, UK
  Projective parabolic geometries
  12:40 – 14:30: lunch break
  14:30 – 15:20: Paul Baird, Univ. Brest, France
  On functions with a conjugate
  15:20 – 15:50: break
  15:50 – 16:40: Thomas Leistner, Univ. Adelaide, Australia
  Conformal holonomy, symmetric spaces, and skew symmetric torsion
  16:50 – 17:40: Andreas Cap, Univ. Vienna, Austria
  Relative BGG sequences

- **Thursday, September 13, 2012**
  09:00 – 09:50: Kengo Hirachi, Univ. of Tokyo, Japan
  Invariant theory for the Szegö kernel and CR Q-curvature
  09:50 – 10:20: coffee break
  10:20 – 11:10: Alexander Isaev, ANU Canberra, Australia
  Reduction of five-dimensional uniformly Levi degenerate CR structures to absolute parallelisms
  11:20 – 12:10: Vladimir Ejov, Univ. South Australia
  Classification of spherical rigid hypersurfaces in C^2
  12:10 – 14:00: lunch break
  14:00 – 14:50: Maciej Dunajski, Cambridge Univ., UK
  SU(2) solutions to self-duality equations in eight dimensions
  14:50 – 15:20: break
  15:20 – 16:10: Paul Tod, Oxford Univ., UK
  The behaviour of conformal geodesics

- **Friday, September 14, 2012**
  09:00 – 09:50: Keizo Yamaguchi, Hokkaido Univ., Japan
  B_3-Geometry in Contact Geometry of Second Order
  10:00 – 10:50: Joseph M. Landsberg, Texas A&M Univ., USA
  Geometry, representation theory, and the complexity of matrix multiplication
  10:50 – 11:20: coffee break
  11:20 – 12:10: Boris Kruglikov, Univ. Tromsø, Norway
  Global Lie-Tresse theorem
  12:20 – 13:10: Vladimir Soucek, Charles Univ. Prague
  On the BGG complexes in a singular infinitesimal character

All lectures as well as the opening and registration take place in the ESI Boltzmann Lecture Hall