

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

TBA

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: Helga Baum, Humboldt Univ., Berlin, Germany

Lorentzian manifolds with special holonomy

16:50 – 17:40: Thomas Leistner, Univ. Adelaide, Australia

Conformal holonomy, symmetric spaces, and skew symmetric torsion

- **Thursday, September 13, 2012**

09:00 – 09:50: Kengo Hirachi, Univ. of Tokyo, Japan

Invariant theory for the Szegő 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

16:20 – 17:10: Andreas Cap, Univ. Vienna, Austria

Relative BGG sequences

- **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