

## Cartan Connections, Geometry of Homogeneous Spaces, and Dynamics

Schedule of talks, week one, July 11 - 15, 2011

organized by Andreas Cap, Charles Frances, Karin Melnick

- **Monday, July 11**

until 10:00 Welcome and registration

10:00 – 11:00: M. Eastwood (ANU, Australia)

*Conformal foliations and CR geometry*

11:00 – 11:30: coffee break

11:30 – 12:30: A. Derdzinski (Ohio State Univ., USA)

*Two-jets of conformal fields along their zero sets, in any metric signature*

12:30 – 14:30: lunch break

14:30 – 15:30: M. Dunajski (Univ. Cambridge, UK)

*$G_2$ -structures and twistor theory*

15:30 – 16:00 coffee break

16:00 – 16:45: D. The (ANU, Australia)

*The Lagrangian Grassmannian, hyperbolic PDE, and  $G_2$*

16:45 – 17:00: break

17:00 – 17:45: B. Warhurst (Univ. New South Wales, Australia)

*Ultrarigid tangents of sub-Riemannian nilpotent groups*

- **Tuesday, July 12**

09:30 – 10:30: O. Biquard (Univ. Paris 7, France)

*Einstein metrics and parabolic geometries*

10:30 – 11:00: coffee break

11:00 – 12:00: C. Frances (Univ. Paris Sud)

*Essential singularities for higher dimensional conformal maps*

12:00 – 14:00: lunch break

14:00 – 15:00: V. Matveev (Univ. Jena, Germany)

*Conformal and isometric transformations of finler manifolds: Wang theorem, Matsumoto question, Deng-Hu conjecture, conformal invariants of Finsler metrics and Lichnerowicz-Obata conjecture*

15:00 – 15:30: coffee break

15:30 – 16:15 M. Hammerl (Univ. Vienna, Austria)

*Holonomy-reductions of Cartan connections*

16:15 – 16:30: break

16:30 – 17:15: J. Merker (Univ. Orsay, France)

*Effective Cartan-Tanaka connections on  $C^6$ -smooth strongly pseudoconvex hypersurfaces  $M^3$  in  $C^2$*

• **Wednesday, July 13**

**09:30 – 10:30:** R. Graham (Univ. Washington, USA)

*Ambient extension of parallel tractors*

**10:30 – 11:00:** coffee break

**11:00 – 12:00:** A. Juhl (Univ. Uppsala, Sweden)

*Explicit formulas for GJMS-operators and Q-curvatures*

**12:00 – 14:00:** lunch break

**14:00 – 14:30:** J. Case (Princeton Univ., USA)

*Quasi-Einstein metrics and the tractor calculus*

**14:30 – 14:45:** break

**14:45 – 15:15:** A. Taghavi-Chabert (Masaryk Univ., Czech Republic)

*The Goldberg-Sachs theorem in higher dimensions*

**15:15 – 15:45:** coffee break

**15:45 – 16:15:** M. Markowitz (Inform. Sec. Corp., USA)

*Intrinsic Pseudodistances for Parabolic Geometries*

**16:15 – 16:30:** break

**16:30 – 17:00:** S. Krysl (Charles Univ., Czech Republic)

*First order operators in projective contact geometry - a classification*

**17:00 – 17:15:** break

**17:15 – 17:45:** C. Luebbe (Univ. Leicester, UK)

*Predicting / prescribing the location of conformal infinity*

• **Thursday, July 14**

**09:30 – 10:30:** A. R. Gover (Univ. Auckland, New Zealand)

*Projective BGG equations, algebraic sets, and compactifications of Einstein geometries*

**10:30 – 11:00:** coffee break

**11:00 – 12:00:** T. Barbot (Univ. Avignon, France)

*Spacetimes with Particles*

**12:00 – 14:00:** lunch break

**14:00 – 15:00:** P. Nurowski (Warsaw, Poland)

*An analog of selfduality in dimension nine*

**15:00 – 15:30:** coffee break

**15:30 – 16:30:** B. McKay (Trinity College, Ireland)

*Hartogs extension theorem for parabolic geometries*

**16:30 – 16:45:** break

**16:45 – 17:30:** V. Zadnik (Masaryk Univ., Czech Republic)

*On split signature conformal metrics induced by half-dimensional projective structures*

• **Friday, July 15**

**09:30 – 10:30:** B. Doubrov (Minsk, Belarus)

*Conformal, symplectic and  $G_2$  structures on solution spaces of ODEs*

**10:30 – 11:00:** coffee break

**11:00 – 12:00:** I. Zelenko (Texas A & M Univ., USA)

*Tanaka prolongation and symplectification procedure for filtered structures on manifolds*

All lectures take place in the **ESI Boltzmann Lecture Hall**