INTERNATIONAL WORKSHOP on

GEOMETRY OF VECTOR DISTRIBUTIONS, DIFFERENTIAL EQUATIONS, AND VARIATIONAL PROBLEMS

13–15 December 2006

Room D, SISSA Main Building

PROGRAM

WEDNESDAY 13 December

9:00-10:00 **Registration**

Morning Session

10:00-10:50 **Tohru Morimoto** (Nara Women University, Japan)

Representations of Graded Lie Algebras and Differential Equations on Filtered Manifolds

10:50-11:40 **Dmitri Alekseevsky** (University of Hull, UK)

Homogeneous bi-Lagrangian manifolds of semisimple group and generalized Gauss decompositions

11:40-12:00 **Coffee Break**

12:00-12:35 **Frederic Jean** (ENSTA, Paris, France)

Generic results for horizontal and singular curves of rank-varying distributions.

Afternoon Session

14:30-15:20 **Bronislaw Jakubczyk** (Stefan Banach International Mathematical Center,Warsaw, Poland)

Invariants of vector distributions of corank 2

15:20-15:55 **Aleksei Kushner** (Astrakhan State University and Control Sciences Institute of the Russian Academy of Sciences, Moscow, Russia)

Invariants of almost-product structures and geometry of Monge-Ampere and Jacobi equations

15:55-16:30 **Svetlana Ignatovich** (Kharkov National University, Ukraine)

Realizable growth vectors and normalization of homogeneous approximations of affine control systems

THURSDAY December 14
Morning Session

9:00-9:50 **Alexandre Vinogradov** (University of Salerno, Italy)

Classification problem and scalar differential invariants

9:50-10:40 **Joseph Landsberg** (Texas A&M University , USA)

Rigidity and flexibility of homogeneous varieties

10:40-11:00 **Coffee Break**

11:00-11:35 **Igor Zelenko** (SISSA, Trieste, Italy)

Canonical frames for vector distributions of rank two and three

11:35-12:10 **Boris Doubrov** (Belorussian State University, Minsk, Belarussia)

Equivalence and invariants of scalar variational problem of higher order

Afternoon Session

14:30-15:20 **Andreas Cap** (University of Vienna and Erwin Schrodinger Institute of Mathematical Physics, Austria)

Parabolic geometries determined by subbundles in the tangent bundle

15:20-15:55 **Maciej Dunajski** (University of Cambridge, UK)

Doubrov invariants, twistor theory and exotic holonomy

16:00-18:00 **POSTER SESSION** (see the list of the participants and titles of their presentations below)

20:00 SOCIAL DINNER

FRIDAY December 15
Morning Session

9:00-9:50 **Jan Slovak** (Masaryk University in Brno, Czech Republic)

Inclusions of parabolic geometries on a manifold

9:50-10:40 **Michail Zhitomirskii** (Technion -Israel Institute of Technology, Israel)

Exact normal form for (2,5) distributions

10:40-11:00 **Coffee Break**

11:00-11:35 **Piotr Mormul**(Warsaw University, Poland)

How to stratify special multi-flag and geometrically encode the emerging strata

11:35-12:10 **Jean-Baptiste Pomet** (INRIA, Sophia Antipolis, France)

Average control system and Finsler geometry (common work with Alex Bombrun)

Afternoon Session

14:30-15:05 **Josef Silhan** (Masaryk University in Brno, Czech Republic)

The conformal Killing equation on forms - prolongations and applications

15:10-16:00 **Pawel Nurowski** (Warsaw University, Poland)

Distinguished dimensions for special Riemannian geometries

Participants of Poster Session

(Thursday, December 14, 16:00-18:00, room D, SISSA Main Building)

Jiro Adachi (Hokkaido University, Sapporo, Japan)

Relative local stability for Engel structures

Francesca Chittaro (SISSA, Trieste, Italy)

An estimate for the entropy of Hamiltonian flows

Dorel Fetcu (Technical University of Iassy, Romania)

Explicit formulas for biharmonic submanifolds in 3-dimensional Sasakian space forms (jointly with Cezar Oniciuc)

Hiroyuki Kamada (Miyagi University of Education, Japan and University of Southern Denmark, Odense, Denmark)

Quaternionic Analog of CR Geometry

Woichech Krynski (Banach Mathematical Center, Poland)

Characteristic vector fields of distributions − determination theorems

Velichka Milousheva (Institute of Mathematics and Informatics, Bulgarian Academy of Science)

On the geometry of hypersurfaces of conullity two in Euclidean spaces

Svyatoslav Pavlichkov (Kharkov National University, Ukraine)

Generalized triangular forms: coordinate-free description and backstepping

Marek Rupniewski (Banach Mathematical Center, Poland)

Determinacy of affine distributions by their singular curves

Katja Sagershnig (University of Vienna, Austria)

An explicit formula for Nurowskis conformal structure

Ulisse Serres (U. Dini University, Firenze, Italy)

Gauss-Bonnet inequalities and Hopf theorem for Zermelo's problem

Valery Yumaguzhin (Program Systems Institute of RAS, Pereslavl'-Zalessky, Russia)

Differential Invariants of classical generic Monge-Ampère equations of hyperbolic type

Vojtech Zadnik (Masaryk University in Brno, Czech Republic)

Chains in contact parabolic geometries