"Rigidity and Flexibility" program of the
International Erwin-Schrödinger-Institute for Mathematical Physics
Boltzmanngasse 9, A-1090 Vienna.
April 23 – May 6, 2006

Schedule

Monday, April 24

9:00 – 10:00. Registration of the participants (will be continued in the coffee break or during noon or even later).

10:00 – 10:15. *Hellmuth Stachel.* Program opening.

10:15 – 11:15. *Robert Connelly*. The origins, background and conjectures related to bellows problems, rigidity and flexibility of polyhedral surfaces.

Coffee break.

11:45 – 12:30. *Idzhad Sabitov*. On rigid and non-rigid surfaces with flat metrics in S^3.

Lunch break.

15:00 – 15:30. Zoltan Szabadka. Globally linked pairs of vertices in equivalent realizations of graphs (joint work with Bill Jackson and Tibor Jordan).

Coffee break.

16:00 – 16:30. *Ljubica Velimirović.* Infinitesimal bending of curves and surfaces.

16:45 – 17:15. *Ljubica Velimirović.* Rigidity and flexibility at non-symmetric affine connection space (joint work with Svetislav Minčić).

Tuesday, April 25

10:00 – 11:00. *Anatoliy Milka*. Linear bendings of star-like pyramids.

Coffee break.

11:30 – 12:15. *Nikolai Dolbilin.* On the unfolding of a rectangle enlarging perimeter.

Lunch break.

14:30 – 15:00. *Hiroshi Maehara.* Reversing a polyhedral surface.

Coffee break.

15:30 – 16:10. *Offer Shai.* The equivalence between static (rigid) and kinematic (mobile) systems through the graph theoretic duality.

Wednesday, April 26

10:00 – 11:00. *Ivan Izmestiev*. Alexandrov theorem, weighted Delaunay triangulations and mixed volumes (joint work with Alexander Bobenko).

Coffee break.

11:30 – 12:15. *Tim Hoffmann.* On the integrability of infinitesimal and finite deformations of polyhedral surfaces (joint work with W. Schief and A. Bobenko).

Lunch break.

14:30 – 15:00. *Brigitte Servatius*. Assembling a graph from globally rigid blocks.

Coffee break.

15:30 – 16:10. *Tibor Tarnai.* Constrained circle packings on a sphere and their (Danzerian) rigidity.

19:00 (optional). Vienna Opera: Le nozze di Figaro, conductor: Riccardo Muti.

Thursday, April 27

   10:00 – 11:00. *Tibor Jordán*. Rank and independence in the 3-dimensional rigidity matroid (joint work with Bill Jackson).

   Coffee break.

   11:30 – 12:15. *Bill Jackson*. Rank and independence in the rigidity matroid of molecular graphs (joint work with Tibor Jordán).

   Lunch break.

   14:30 – 15:00. *András Recski*. One-dimensional synthesis of graphs as tensegrity frameworks (joint work with Offer Shai).

   Coffee break.

   15:30 – 16:00. *Sergey Mikhalev*. A metric description of Bricard's flexible octahedra of the 3rd type.

   16:15 – 16:45. *Paul Penning*. Some observations on Bricard octahedrons.

   18:30 (optional). Conference Dinner: Visit of a typical Viennese wine-yard Wilfinger Wien 19, Neustift, Hameaustrasse 5.

Friday, April 28

   10:00 – 11:00. *Yves Martinez-Maure*. Principles, problems and new tools for hedgehog theory.
   Coffee break.
   11:30 – 12:30. *Dragutin Svrtan*. On circumradius equations for cyclic polygons.
   Lunch break.
   14:30 – 16:00. Problem section.

Monday, May 1

   State holiday in Austria.

Tuesday, May 2

   10:00 – 11:00. *Gayane Panina*. Hyperbolic virtual polytopes and related topics. Lecture 1.
   Coffee break.
   11:30 – 12:15. *Jean-Marc Schlenker*. Rigidity results for Euclidean polyhedra through hyperbolic geometry.
   Lunch break.
   14:30 – 15:15. *François Fillastre*. Realization of polyhedral metric on compact surfaces.
   Coffee break.
   15:45 – 16:15. *Walter Whiteley*. Some observations from the projective theory of rigidity.

Wednesday, May 3

   10:00 – 11:00. *Gayane Panina*. Hyperbolic virtual polytopes and related topics. Lecture 2.
   Coffee break.
   11:30 – 12:15. *Anatoliy Milka*. Unidentified Egyptian geometry.
   Lunch break.
   14:30 – 15:00. *Tibor Tarnai*. Detecting first-order infinitesimal mechanisms in bar-and-joint assemblies.
   Coffee break.
   15:30 – 16:00. *Hellmuth Stachel*. A proposal for a proper definition of higher-order rigidity.

Thursday, May 4

      10:00 – 11:00. *Gayane Panina.* Hyperbolic virtual polytopes and related topics. Lecture 3.

      Coffee break.

      11:30 – 12:15. *Walter Whiteley.* Some observations from parallel drawing.

      Lunch break.

      14:30 – 15:00. *Idzhad Sabitov.* On some approach to the problem of Bonnet's pairs of surfaces.

      Coffee break.

      15:30 – 16:00. *Victor Alexandrov.* Hidden symmetries of flexible polyhedra and the Strong Bellows Conjecture.

Friday, May 5

      10:00 – 11:00. *Nikolai Dolbilin.* The Minkowski theorem on convex polyhedra and its role in the tiling theory.

      Coffee break.

      11:30 – 12:15. *Natalia Kopteva.* Blaschke addition and convex polyhedra (joint work with V.Alexandrov and S.Kutateladze).

      Lunch break.

      14:30 – 16:00. Problem section.

      16:00 – 16:15 *Hellmuth Stachel.* Program closing.