

**A) Geometric modeling and control of multi-physics systems**  
**B) Field theory: Variational sequences and bicomplexes**

**Organizers**

Lepage Research Institute, Slovakia      Jagiellonian University in Kraków, Poland  
University of Prešov, Slovakia      VŠB-Technical University of Ostrava, Czech Rep.  
Eötvös Loránd University, Hungary      Lodz University of Technology, Poland

**Program**

**Monday, August 21**

9:00      *Opening the School*

*Courses*

9:15–10:45      A. van der Schaft – Geometric modeling and control of multi-physics systems

10:45–11:00      *Coffee break*

11:00–12:30      E. Winterroth – Field Theory: Variational sequences and bicomplexes

*Workshop*

15:00–15:30      J.W. Lee – Seiberg-Witten invariants on 3-manifolds with an orientation-reversing involution

15:30–16:00      Y.H. Kim – Elliptic Linear Weierstrass Surfaces of 3-spheres

16:00–16:20      *Coffee break*

16:20–16:50      M. Palese – Higgs fields induced by Yang–Mills type Lagrangians on gauge-natural prolongations of principal bundles

16:50–17:20      Á.P. Llarena – On Extremals of Curvature Energies used in Visual Curve Completion

19:00      *Conference dinner*

**Tuesday, August 22**

*Courses*

9:00–10:30      A. van der Schaft – Geometric modeling and control of multi-physics systems

10:30–11:00      *Coffee break*

11:00–12:30      E. Winterroth – Field Theory: Variational sequences and bicomplexes

*Workshop*

15:00–15:30      N. Rutten – Flows on the space of Poisson structures

15:30–16:00      B. Balcerzak – Dirac type operators on symmetric tensors

16:00–16:20      *Coffee break*

- 16:20–16:50 S.D. Jung – Basic Dolbeault cohomology on transversely Kahler foliations  
16:50–17:20 D. Krupka – On variational principles in Finsler geometry

### **Wednesday, August 23**

#### *Courses*

- 9:00–10:30 A. van der Schaft – Geometric modeling and control of multi-physics systems  
10:30–11:00 *Coffee break*  
11:00–12:30 E. Winterroth – Field Theory: Variational sequences and bicomplexes

#### *Workshop*

- 15:00–15:30 S. Gao – Geometric Optimal Control of Robot Manipulators  
15:30–16:00 S. Gao, B.L. Wang – An algorithm of path planning for manipulator end-effector  
16:00–16:20 *Coffee break*  
16:20–16:50 J. Chen – Geometric optimal control of robot manipulators  
16:50–17:20 S. Liu – The nonlinear dynamics based on the nonstandard Hamiltonians

### **Thursday, August 24**

#### *Courses*

- 9:00–10:30 A. van der Schaft – Geometric modeling and control of multi-physics systems  
10:30–11:00 *Coffee break*  
11:00–12:30 E. Winterroth – Field Theory: Variational sequences and bicomplexes

#### *Workshop*

- 15:00–15:30 D. Zenkov – Midpoint Rule as a Structure-Preserving Integrator  
15:30–16:00 Z. Urban, J. Brajerčik – First-order variational field theory for submanifolds  
16:00–16:20 *Coffee break*  
16:20–16:50 M. Orioux – Pi-singularities in minimum time control for space mechanics  
16:50–17:20 *to be announced*

### **Friday, August 25**

#### *Excursions starting at 9:00:*

- a) “Wieliczka“ Salt Mine
- b) Hiking in the Tatra Mountains (the hiking boots and warm clothes are recommended)
- c) Sightseeing walking tour of Old Town of Krakow