The 16th Student Winter School on
MATHEMATICAL PHYSICS

The Doppler Institute of the Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University in Prague and the Physics Department, University of Bialystok have organized the International Winter School for undergraduate and graduate students in the village Horní Polubný (Jizera Mountains), January 21 – 27, 2007.

The aim of the School was, on the one hand, to present the mathematical principles of modern physical theories in review lectures based on simple examples. On the other hand, the school gave the students a unique opportunity to present the results of their research work in English and so contributed to the improvement of their communication skills in a very informal international setting. The participants came from the Bialstok University (Poland) (15), Comenius University in Bratislava (5), and Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University (20).

The varied topics dealt with in the School were related to several fields of contemporary mathematical physics. Up to five daily lectures of the Winter School were held in the morning (9.00 -- 13.30 a.m.); late afternoons were reserved for discussions. The setting of the Jizera mountains covered with snow surrounding the village enriched the overall informal atmosphere of this fruitful meeting.

Prague, February 1, 2007

Prof. Ing. Jiri Tolar, DrSc. (Doppler Institute)
Doc. Ing. Goce Chadzitaskos, CSc.
 (on behalf of the Organizing Committee)

List of lectures:

- A. Odzijewicz: Grupoids
- P. Bóna: Geometry of nonlinear Schrodinger Equation
- L. Hlavatý: Origins of T-duality

Student presentations:

- M. Jílek: Quantum waveguides
- P. Siegl: Quasi-Hermitian Hamiltonians
- T. Golinski: Quantum Hamiltonians with SL(2,R) symmetry
- D. Vašata: Point interaction in one dimension
- L. Háková: Sturmian words
- A. Bezubik: Equivalence groups and invariants for differential equations oscillator in a non--commutative plane
- H. Lavička: Simulation of National missile defense
- U. Ostaszewska: On spectral radius of finite sums of weighted positive operators
- I. Petr: Introduction to Poisson Lie T-duality
- V. Štěpán: Is it legal?
- J. Smrek: Introduction to dynamics of open quantum systems
- T. Rybár: Quantum teleportation and dense coding
- J. Tekel: Introduction to noncommutative geometry and QFT
- J. Skákala: Collapsing polytropic star within general theory of relativity
- P. Šulc: Mutually unbiased bases and quantum communication
- J. Pavtel: Integrability of quadratures
- P. Ambrož: Interval Transformations and their matrices
- P. Kocábová: Propagator construction of multiply connected manifold
- P. Vytřas: Selfadjoint extensions and singular potentials
- M. Svobodová: Fine gradings of Lie algebras