

The 17th 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 Department of Mathematics, University of Bialystok have organized the International Winter School for undergraduate and graduate students in the village Horní Polubný (Jizera Mountains), January 20 -- 26, 2008.

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. The main speaker was prof. T. Voronov from Manchester University. 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) (14), Masaryk University in Brno (2), University of Manchester (1), University of Hradec Králové (1) and Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University (22).

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, 2008

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

List of lectures:

- A. Odziejewicz: Quantum Ball I - II
- Theodor Voronov Supermanifolds and the Applications in Differential Geometry and Mathematical Physics I - IV
- Jan Kříž Medical Time Series From Point of View of Mathematical Physics I – II
- Šnobl Libor Symplectic Geometry and Poisson Structures

Student presentations:

1. Tušek Matěj Asymptotic perturbation theory for harmonic oscillator in the Lobachevsky Space
2. Siegel Petr Pseudo-hermitivity vs PT Symmetry
3. Novotný Petr Casimir Operator
4. Štefaňák Martin Recurrence of Quantum Walks
5. Kalvoda Tomáš Classical Particle Aharonov – Bohm periodic flux in time
6. Lavička Hynek National Missile Defense
7. Pavtel Jan Integrability in Quadratures of the Weber Equation
8. Záruba Michal Launching Structures for Lower Hybrid Waves
9. Potoček Václav An Introduction to Quantum Algorithms
10. Jež Pavel Higgs mechanism
11. Panušková Monika b-tagging on ATLAS