



International Symposium on Dynamical Properties of Solids

Český Krumlov, Czech Republic,
September 27 – October 1, 2005

The DYPROSO Symposium is a research meeting aimed at promotion of new ideas and concepts in physics of excited states of condensed matter by stimulating scientific discussions among young and experienced scientists actively working in this broad field. Advances both in the theory and in the experiment are presented. The general scope of the meeting includes topics like lattice, spin and charge dynamics, phase transitions, glasses, and soft condensed matter. The symposium format assumes limited number of participants, no proceedings and no parallel sessions. The speakers are encouraged to talk about their latest results and about open problems, and they are asked to include in their talk a tutorial overview of recent advancements in the relevant field.

The DYPROSO XXX meeting will be held in Český Krumlov, a charming little town of South Bohemia, with its historical centre inscribed on the UNESCO World Heritage List. The scientific program will focus on oxygen octahedra and sp^2 carbon motifs, size and dimensionality effects, nanoscale and mesoscopic order, and on dynamical properties of magnetic, superconducting and ferroelectric solids.

Manganites and orbital physics

- J. van den Brink (Leiden) *Magnetism versus ferroelectricity: A new way to combine both*
 T. G. Perring (Chilton) *Magnetic excitations in manganites*
 U. Staub (Villigen) *Orbital order and dynamics in RB_2C_2*
 C. Ulrich (Stuttgart) *Spin and orbital correlations in transition metal oxides (titanates and vanadates)*
 D. Khomskii (Koeln) *Insulator-metal transitions and orbitally driven superstructures in correlated systems*

Relaxors

- S. B. Vakhrushev (St. Petersburg) *Lattice dynamics of cubic relaxors*
 S. Gvasaliya (Villigen) *Relaxational mode and phonon-coupling effects across the Burns temperature in $PbMg_{1/3}Nb_{2/3}O_3$*
 S. Kamba (Praha) *Dynamics of polar clusters in relaxor ferroelectrics*
 J. Kreisel (Grenoble) *Effect of high pressure on perovskite-type relaxor ferroelectrics*

Polar dielectrics

- P. Pruzan (Paris) *Vibrational dynamics and local structures in $KNbO_3$ - investigation up to 30 GPa and from 20 to 500 K*
 T. Kolodiaznyy (Tsukuba) *Spin gap opening in chemically doped n-type $BaTiO_3$*
 M. Fontana (Metz) *Phonon dynamics of intrinsic and extrinsic defects in $LiNbO_3$*
 W. Schranz (Wien) *Ordering and dynamics near the phase transitions of lawsonite*

Anharmonic lattice dynamics

- K. Schmalzl (Grenoble) *Approaching anharmonic properties in fluorites*
 L. S. Schulman (New York) *Structure and time-dependence of quantum breathers*
 E. Mihokova (Praha) *Role of breathers in anomalous decay*

Clathrates, nanoporous matter and quasiperiodic systems

- A. San Miguel (Lyon) *Dynamical properties of group-IV clathrate systems*
 A. Naberezhnov (St. Petersburg) *Phase transitions in a confined sodium nitrite*
 R. Currat (Grenoble) *Phasons in quasiperiodic structures*
 M. de Boissieu (Grenoble) *Dynamics of Phason Modes in the $i-AlPdMn$ Quasicrystal*

Carbon nanostructures

- J. Maultzsch (Berlin) *Optical transitions and excitonic effects in single-walled carbon nanotubes*
 L. Kavan (Praha) *Spectroelectrochemistry at carbon nanostructures*
 T. Pichler (Dresden) *Single wall carbon nanotubes with tuneable electronic properties: Engineering of one dimensional molecular nanostructures*

Carbon superconductivity

- L. Boeri (Stuttgart) *Three-dimensional MgB_2 -type superconductivity in hole-doped diamond*
 J. Haruyama (Kanagawa) *Superconductivity with $T_c = 12$ K in entirely end-bonded multi-walled carbon nanotubes*
 G. Loupiau (Paris) *Superconductivity of bulk CaC_6*

High T_c superconductivity

- Y. Sidis (Saclay) *Resonant spin excitations in superconducting $YBa_2Cu_3O_{6+x}$: In-plane geometry and bilayer effect*
 I. Eremin (Dresden) *Resonant magnetic excitations in high- T_c cuprates: Influence of orthorhombicity and upward dispersion*
 S. V. Borisenko (Dresden) *Angle-resolved photoemission spectroscopy on high-temperature superconductors: Searching the pairing boson*

Quantum tunnelling and entanglement

- R. Schilling (Mainz) *Quantum dynamics of molecular magnets: Spin-tunneling and the Landau-Zener effect*
 F. Fillaux (Thiais) *Macroscopic quantum tunnelling of protons in the $KHCO_3$ Crystal*

Methodical advances and experimental horizons

- L. Mitás (Raleigh) *Quantum Monte Carlo methods: New developments and applications to transition metal compounds*
 J. Kulda (Grenoble) *Studies of self-energies of elementary excitations in solids by neutron three-axis spin-echo spectroscopy*
 B. Murphy (Kiel) *Dynamics at the surface and beyond - surface inelastic X-ray scattering*
 M. H. Lemée-Cailleau (Grenoble) *Ferroelectric order induced by 100 fs laser pulses: A time-resolved study combining 100-picosecond X-ray diffraction and optical spectroscopy*
 A. Bossak (Grenoble) *Phonon density of states probed by inelastic X-ray scattering*
 P. Simon (Orleans) *Raman spectroscopy at high temperatures*
 N. Gidopoulos (Oxon) *Non-adiabatic electronic excitation in neutron-Compton scattering*