Electronic States and Phases Induced by Electric or Optical Impacts.

IMPACT-2012

http://lptms.u-psud.fr/impact2012

September 10-14, 2012
Orsay, France

Organizers:

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Recent years witness an emergence and a very fast development of a new activity in condensed matter physics. The goal is to achieve controlled transformations of electronic states or even of whole phases by external impacts.
There are two main directions:
the electrostatic effects of very strong electric fields and the supercritical optical pumping; the latest trend is to employ them in combination.
Being as young as from 2000's, the studies demonstrated an explosive development during last two years. It is particularly important to reach a synergy and cross-fertilization between the branches of the new science which still lack an acquaintance - particularly with respect to the two major techniques, but also on different classes of materials.
We organize a synergetic conference which unifies the following subjects:

EFFECTS

- Impact switching of the superconducting state
- Impact switching of the Mott insulators.
- Impact switching of magnetically ordered states.
- Impacts upon phases of electronic crystals: CDW, SDW, AFM, FM, charge ordering.
- Interface electronic phases.
- Time evolution of electronic spectra.
- Time evolution of lattice and collective modes.
- Symmetry breaking and restoration.
- Inhomogeneous and/or instantaneous cooperative electronic phases and topological defects.

METHODS

- Electrostatic doping and field effect.
- MBE fabrication of active interfaces.
- Combined methods: ferroelectric amplification.
- Combined methods: electrolytic field effect.
- Combined methods: the light and the field.
- Femtosecond optical pump-and-probe.
- Time resolved ARPES probes.
- Time resolved diffraction, X-ray laser sources.

MATERIALS OF INTEREST

cuprates, pnictides, oxides, halcogenides, organic conductors, polymers, semimetals and semiconductors.

ABSTRACT SUBMISSION:

http://lptms.u-psud.fr/impact2012/abstract-submission

Deadline for the abstract submission is

May 25, 2012.

Some sources of financial support will be available. Fees waiving or reduction are previewed for students and some speakers.

Confirmed sponsors:

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