School on Electron-Phonon Physics from First Principles

19 - 23 March 2018
Trieste, Italy

The School addresses senior PhD students and experienced researchers with prior working knowledge of DFT.

Theoretical and hands-on training will focus on ab-initio calculations of many properties relating to the electron-phonon interaction, for applications in condensed matter physics, materials physics, and nanoscience.

Starting from an introduction to the background on electron-phonon physics and related materials properties from the point of view of ab-initio calculations, we will show the participants how to perform cutting-edge electron-phonon calculations using a suite of electronic structure codes, including EPW, Wannier90, Quantum ESPRESSO, and ABINIT.

Topics:

- Density functional perturbation theory
- Electron-phonon coupling
- Phonon-assisted optical absorption
- Maximally-localized Wannier functions
- Temperature dependence of the electronic bandstructure
- Electronic transport using the Boltzmann transport equation
- Phonon-driven superconductivity

How to apply:

Online application:
http://indico.ictp.it/event/8301/

Female scientists are encouraged to apply.

Grants:

A limited number of grants are available to support the attendance of selected participants, with priority given to participants from developing countries. There is no registration fee.

Directors:

S. Poncé, University of Oxford
E.R. Margine, Binghamton University - SUNY
F. Giustino, University of Oxford

Local Organizers:

R. Gebauer, ICTP
N. Seriani, ICTP

Lecturers:

S. de Gironcoli, SISSA
P. Giannozzi, University of Udine
F. Giustino, University of Oxford
X. Gonze, Univ. Catholique of Louvain
E. Kloupakis, University of Michigan
E. R. Margine, Binghamton University-SUNY
G. Pizzi, EPFL
S. Poncé, University of Oxford

Deadlines:

1 December 2017
for those needing visa and/or financial support
15 January 2018 otherwise

Further information:
http://indico.ictp.it/event/8301/
smr3191@ictp.it

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