



EINLADUNG zum IFP-SEMINAR

- Thema: **Robust s_{\pm} Superconductivity in a Two-Band Hubbard-Fröhlich Model of Alkali Doped Organics**
- Vortragender: **Tao Qin**
SISSA, Triest, Italien
- Host: Karsten Held
- Termin: **Donnerstag, 31 Juli 2014, 15 Uhr**
- Ort: Institut für Festkörperphysik, TU Wien
Wiedner Hauptstraße 8-10, 1040 Wien
Seminarraum 138C, 9. OG (gelbe Leitfarbe)
- Förderer: ERC-StG-306447 AbinitioDGA

Experimental superconductivity reports have recently appeared for doped aromatics such as picene, coronene, phenanthrene and others. A basic common to most theoretical calculations is that electronic bands, derived from LUMO+1 molecular states must be narrow; that electron correlations must be strong; and that intermolecular, Fröhlich type electron-phonon coupling is also strong. Here we solved the Hubbard-Fröhlich model, which embeds these three ingredients, borrowing the specific form and parameters from a recent ab-initio calculations for La-phenanthrene. We firstly show the mean field solution is a two-band superconducting state which survives because of opposite sign gaps even in the presence of the large Hubbard U . We then introduce the correlation effects at the Gutzwiller level, show that superconductivity can survive the onset of an antiferromagnetic insulator at least for U not too large.

