Master Physique fondamentale et applications
Electronic structure of quantum materials

Informations

Composante : Faculté des Sciences

Langue(s) d'enseignement

Anglais

Contenu

Quantum Materials
Berry curvature and band structure
Chern number and TKNN theorem, bulk-boundary correspondence
Dirac metals and high energy physics emulation (Klein tunneling, axion, etc.)
Topological insulators and semimetals
Topological superconductors. Kitaev model.
Introduction to strongly correlated topological materials
Band structure characterization
Photoemission (XAS, XMCD, XMLD)
spin-resolved ARPES
Scanning Tunneling Spectroscopy

Compétences à acquérir

Learn the basic concepts associated with quantum materials

Understand the realization of topology in real materials

Explore the different experimental techniques to characterize electronic band structures

Pré-requis obligatoires

Condensed Matter and optics
Quantum Physics; Statistical physics

Prérequis recommandés

Advanced condensed matter
Correlated matter and quantum transport

VOLUME HORAIRE

- Volume total: 40 heures
- Cours magistraux: 20 heures
- Travaux dirigés: 20 heures

Codes Apogée

- SPFDU02C [ELP]

Pour plus d'informations

Aller sur le site de l'offre de formation...

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