Master Physique fondamentale et applications
Matière condensée avancée - advanced condensed matter

Informations

Composante : Faculté des Sciences

Langue(s) d'enseignement

Anglais

Contenu

Point groups and space groups, tensor symmetries (piezo, pyro)
Magnetic order: quantum origin, intra- and interatomic exchange, mean field, band magnetism, magnons, magnetic domains and domain walls
Polarisability and ferroelectric order
Introduction to superconductivity conditions for superconductivity, superconducting materials, Meissner effect, quantization of magnetic flux, Josephson effect, thermodynamics of superconductors (Ginzburg-Landau)

Compétences à acquérir

Know and understand the ferroelectric and magnetic order. Use fundamental mathematical concepts and formalisms to solve a solid-state physics problem. Become familiar with the different properties and models of superconductors

Bibliographie, lectures recommandées

M.P.Marder – Condensed Matter Physics
J. Stöhr and H. C. Siegmann – Magnetism: From Fundamentals to Nanoscale Dynamics
M. Tinkham - Introduction to Superconductivity

VOLUME HORAIRE

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

Codes Apogée

- SPFBU04C [ELP]

Pour plus d'informations

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

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