UE Large Scale Facilities for Soft Matter

Niveau d'étude
Bac +5

ECTS
3 crédits

Composante
UFR Physique, Ingénierie, Terre, Environnement, Mécanique (PhITEM)

Période de l'année
Automne (sept. à dec./janv.)

Diplômes intégrant cet élément

- Master Nanosciences et nanotechnologies

Langue(s) d'enseignement: Anglais

Ouvert aux étudiants en échange: Oui

Code d'export Apogée: PAX9NFAC

Présentation

Description

Goal: The aim of the lecture is to give an overview of the neutrons based and X-ray based techniques suitable for the study of soft matter at the nanoscale.

Content: The first part of the lecture will go into details of the dynamical structure factor S(Q,w), its relations with the properties of the materials, and how it can be extracted from short length scale radiation scattering.

The second part will focus on more specific techniques such as small angle scattering and reflectometry for structural investigations, inelastic and quasi-elastic scattering for the study of the dynamics, and the complementarity between the different radiations. Instrumental aspects of the last generation of instruments developed at large scale facilities will be presented.

The last part will describe the most advanced X-ray techniques based on absorption (ASAXS, EXAFS, GISAXS….) and coherent imaging (CXDI, pychography…).

Informations non contractuelles.
Dernière mise à jour le 30 juin 2026

Heures d'enseignement

CMTD	Cours magistral - Travaux dirigés	22,5h

Pré-requis recommandés

A good knowledge of the fundamental principles of ray-matter interactions is mandatory to take benefit of this course.

Période : Semestre 9

Infos pratiques

Lieu(x) ville

Grenoble

Campus

Grenoble - Domaine universitaire

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