New superconductors and heterostructures for the next generation of particle accelerators

SEMINAIRE

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Amphithéâtre SOLEIL

Superconducting RF (SRF) cavities, made of pure niobium (Nb), are the corner stone infrastructure of most actual and future particle accelerators and one of the largest operational and constructional challenge. This technology is widely used for a very broad range of fundamental research field and applications: High energy Physics, Nuclear physics, X-Ray Light Sources, and medical hadron therapy. Future accelerators (FCC, ILC) with higher beam current will heavily rely on, for instance, finding the means to build SRF cavities with much higher quality factor, Q. Moreover more compact and cheaper accelerators will demand higher accelerating gradients, E_{MAX}. There is therefore a pressing need to find new materials and structures that will increase both the Q, and the E_{MAX} of SRF cavities. I will present some of the solutions proposed to meet these requirements and the how synchrotron-based characterization in synergy with tunnelling spectroscopy and numerical simulations have provided a unique insight into the dissipation and growth mechanism of superconducting structures proposed for SRF cavities.

Ce séminaire sera suivi d'une pause café

Formalités d'entrée : accès libre dans l'amphi du pavillon d'Accueil.
Si la manifestation a lieu dans le Grand Amphi SOLEIL du Bâtiment Central merci de vous munir d'une piece d'identité (à échanger à l'accueil contre un badge d'accès)

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