

The Beams and Applications Seminar Series

Niobium for future accelerators:

material aspect and R&D issues for RF superconductivity

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Bldg. 401, rm B2100

Friday, April 14, 1:30pm

Host: K.-J. Kim, ASD

Superconducting Radiofrequency cavities are now widely used in accelerators, such as light sources (synchrotron, SASE-FEL) or high power hadron beams for neutron sources, or nuclear physics (ATLAS, RIA) . SRF is also the key technology foreseen for the ILC, the next generation international linear collider for high energy physics. It can also be used for other applications such as. Any of these applications can be very demanding in terms of performance, i.e. high accelerating gradient and/or low losses, and a project like ILC has specifications that can be achieved on lab scale but are not yet achievable on an industrial scale. Basic R&D on the material is a way to better understand the origin of the dispersion of performances, and to overcome it. As a first step we will retrace the last 15 years of SRF R&D, and we will try to show how a better understanding of the physics of the RF superconductivity helped to overcome technical limitations. In the second part we will try to summarize the latest issues in cavities performances, well as the main research directions that need to be pursued. This includes fine surface physics experiments that have to be conducted... in (superconducting?) synchrotron light sources!

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(wangcx@aps.anl.gov, 630-252-4968) to arrange for a gate pass.

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