

**The Beams and Applications Seminar Series**

**Superconducting Niobium  
Accelerator Cavity Defect  
Localization and Repair**

**Dr. Zachary Conway, Cornell University**

**Bldg. 203, Room R150**

**Friday, June 25, 1:30 PM**

Host: P. Ostroumov - PHY

Almost all superconducting-niobium accelerator cavities have surface defects and have to be operated at accelerating gradients below the maximum theoretical limit. This increases the cost and complexity of several proposed accelerator facilities, e.g., the International Linear Collider (ILC), the FNAL project-X driver accelerator, and other high-accelerating gradient machines.

Surface defects nucleate normal conducting regions which become unstable and expand once the conductive cooling to the defect is less than the dissipated RF power. This presentation will begin with a review of current state-of-the-art niobium accelerator cavity performance and then focus on Cornell University's experimental methods for locating defects and how we use them to improve cavity performance. We adopted the ANL second sound defect location technique three years ago and our results will be presented.

**For more information visit**

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([mnolasco@aps.anl.gov](mailto:mnolasco@aps.anl.gov), 630-252-6159) to arrange for a gate pass.