

# *Pushing the Limits of RF Superconductivity Workshop*

## Abstract Submission Form for Contributed Talks

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**Session:** (choose one)

Ultimate Field Limits, New Materials, New Geometries

High Q, Field Emission, Q-Slopes

Future Research Paths to Ultimate Performance

### **ABSTRACT:**

**Title:** An Investigation of the Properties of Grain Boundaries in BCP Nb for SRF Cavities

FNAL and the Applied Superconductivity Center at the University of Wisconsin-Madison have started a collaboration to perform basic research into superconducting RF materials. Our primary thrust is to gain a better understanding of the effect of grain boundaries on the RF surface resistance, using a combination of magneto-optics, surface analysis, electron microscopy and transport measurements. Preliminary magneto-optical measurements on mm-size grain samples suggested preferential flux penetration through the grain-boundaries. This is an indication of depressed superconductivity in the grain boundaries. New experiments are planned that will measure the inter-grain critical current. We will report on the progress of this collaboration.

30 mins

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