

# *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:** Measurements of the high field Q-drop in TE011/TM010 mode in a single cell cavity

This talk will present new results from measurements of the surface resistance and high field behavior of a single cell bulk niobium cavity excited in the TE011 and TM010 mode. The TE011 mode has only magnetic field on the surface and allow excluding any electric field effect on the cavity performance. Different treatments such as baking, anodization and heat treatment have been applied and peak magnetic fields up to 144mT have been achieved. Differences in the high field behavior of the two modes have been revealed and will be compared with existing models explanations.

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