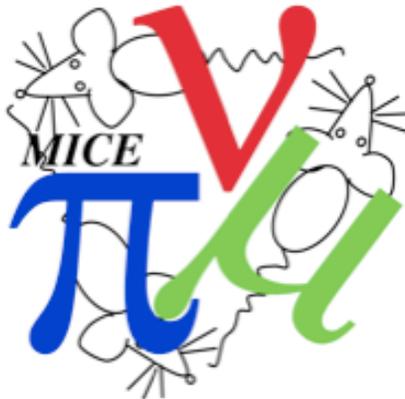


The MTA Experimental Plan

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MICE and the Muon Collaboration need to know:

- Can we operate reliably at 8 - 15 MV/m with a ~4 T field ?
- Can we reduce field emission backgrounds with high work function materials ?
- Will coatings of these materials stick to the copper ? **underway**
- Can they be applied to a large, expensive (and fragile) cavity ?
- Can we defeat the magnetic field effects by reducing field emission ?
- Will high intensity beams change things ?
- Can high pressure gas reduce breakdown ? **underway**
- Can Materials Science techniques reduce breakdown ?
- **Will aluminum grids work?**
- **Can we understand the physics of breakdown from secondary emission spectra?**

Muon Test Area Experimental Program

- 805 MHz cavity
 - Curved windows
 - Button tests of different materials
 - Magnetic field studies
 - High pressure cavities
 - Pulse length studies
 - Aluminum grid tests

(the flat ones were unstable)
(damage in different materials)
(we need to operate at 5T)
(high pressures may be good)
This program is underway
(understanding $E_{acc}(s_2(\tau))$)
(damage pattern on Al)
 - 201 MHz cavity
 - Conditioning and breakdown studies
 - Magnetic field studies

(needed for MICE)
(Can we reach 16 MV/m?)
 - Surface modification and control
 - Scaling of operating parameters
- (Can we do better?)
(predicting $E_{acc}(\beta, mat'l, \tau \dots)$)