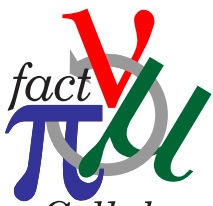


Muon Collaboration

MuCool- MICE Technical Interface

A. Bross
MC Meeting
Berkeley, 2/05



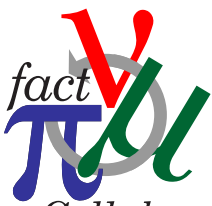
Muon Collaboration

MuCool - MICE Technical Interface

- The technical program for MuCool has been well established and has worked in close coordination with the goals of MICE. There have been some recent changes, however

The PROGRAM:

- RF
 - ◆ Goal to test 805 and 201 MHz cavities to the highest gradients possible.
 - Study breakdown mechanisms
 - Measure electron and gamma emissions
 - Develop techniques to reduce emissions and run stably at very high gradient
 - Surface treatments
 - Coatings
 - Materials
 - ◆ Directly applicable to the needs/goals of MICE.
 - Low-background high-gradient 201 MHz operation crucial to MICE
 - ◆ Study closed-cell structures (windows)
 - Start with MICE windows and then move beyond



Muon Collaboration

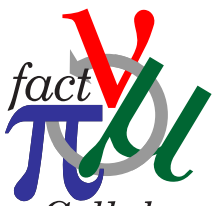
MuCool - MICE Technical Interface

• Absorber Program

- ◆ In this area the MuCool and MICE efforts have diverged somewhat.
 - ◆ MuCool will still focus on LH₂ absorbers than can withstand high-power loading
 - MICE will not (CC option)
 - ◆ Convective and Forced-Flow options will be explored
 - Primary motivation for the cryo-infrastructure now being installed in the MTA
- ◆ There still exist a number of common areas of interest/study
 - ◆ Window design
 - ◆ Instrumentation
 - ◆ Safety aspects

• MTA High-Intensity Beam line

- ◆ MuCool is working to bring LINAC beam out to the MTA as soon as possible
 - ◆ These high-intensity (power) studies were are still are considered complementary to the MICE program



Muon Collaboration

MuCool - MICE Technical Interface

- **Solenoid Design**

- ◆ The MuCool collaboration continue to work on coupling coil (and general) magnet design.
 - ◆ Engineering
 - ◆ Optimization
 - ◆ Cost
- ◆ Obviously a RF-Coupling Coil module is fundamental to MICE

- **Conclusion**

- ◆ A close collaboration between MuCool and MICE exists and is crucial to the success of both programs