MuCooL- MICE Technical Interface

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MC Meeting

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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**

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- **Absorber Program**
  - In this area the MuCooL and MICE efforts have diverged somewhat.
    - MuCooL will still focus on LH_2 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

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- **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 exits and is crucial to the success of both programs