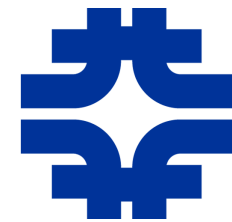
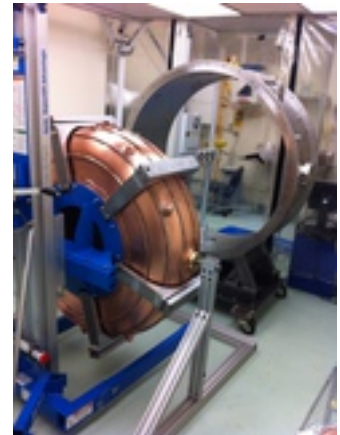
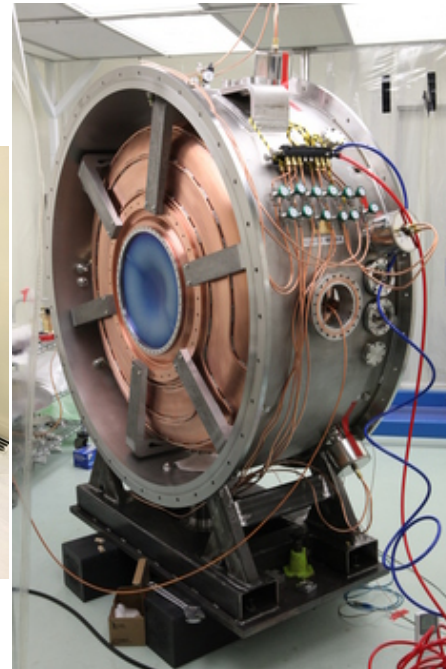
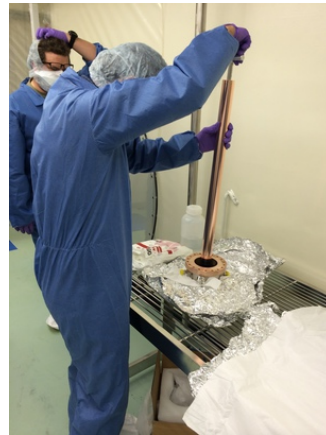
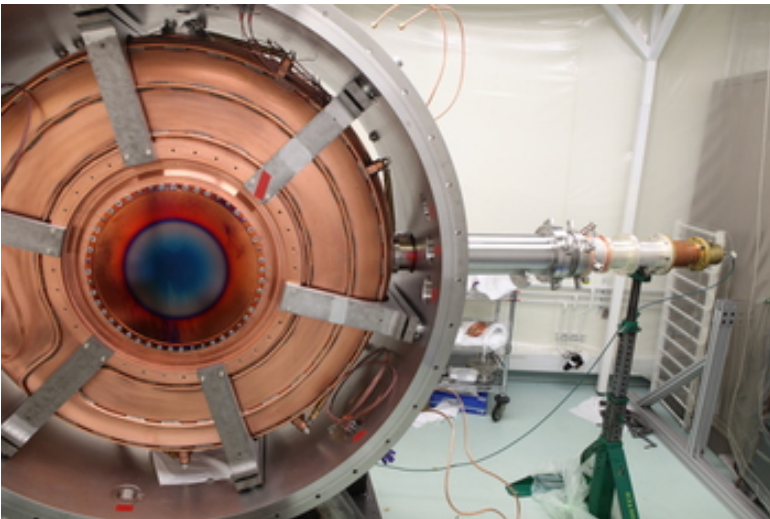
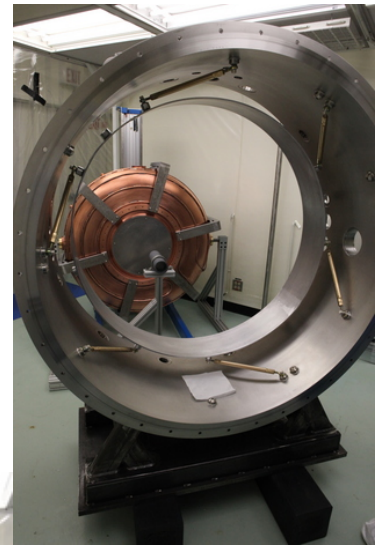
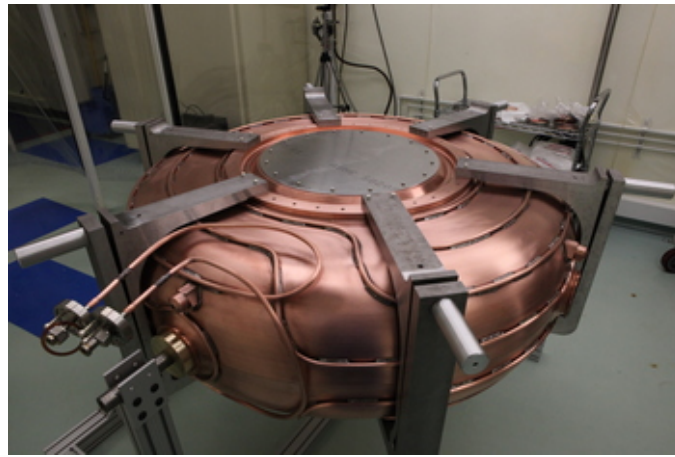
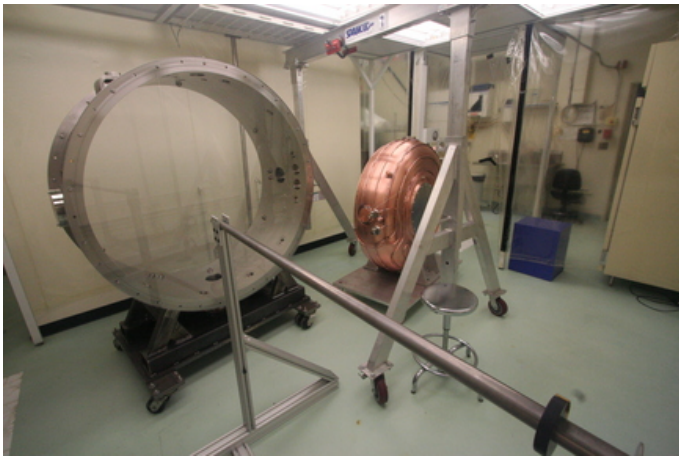


MICE Single-Cavity Module Status

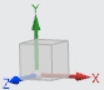
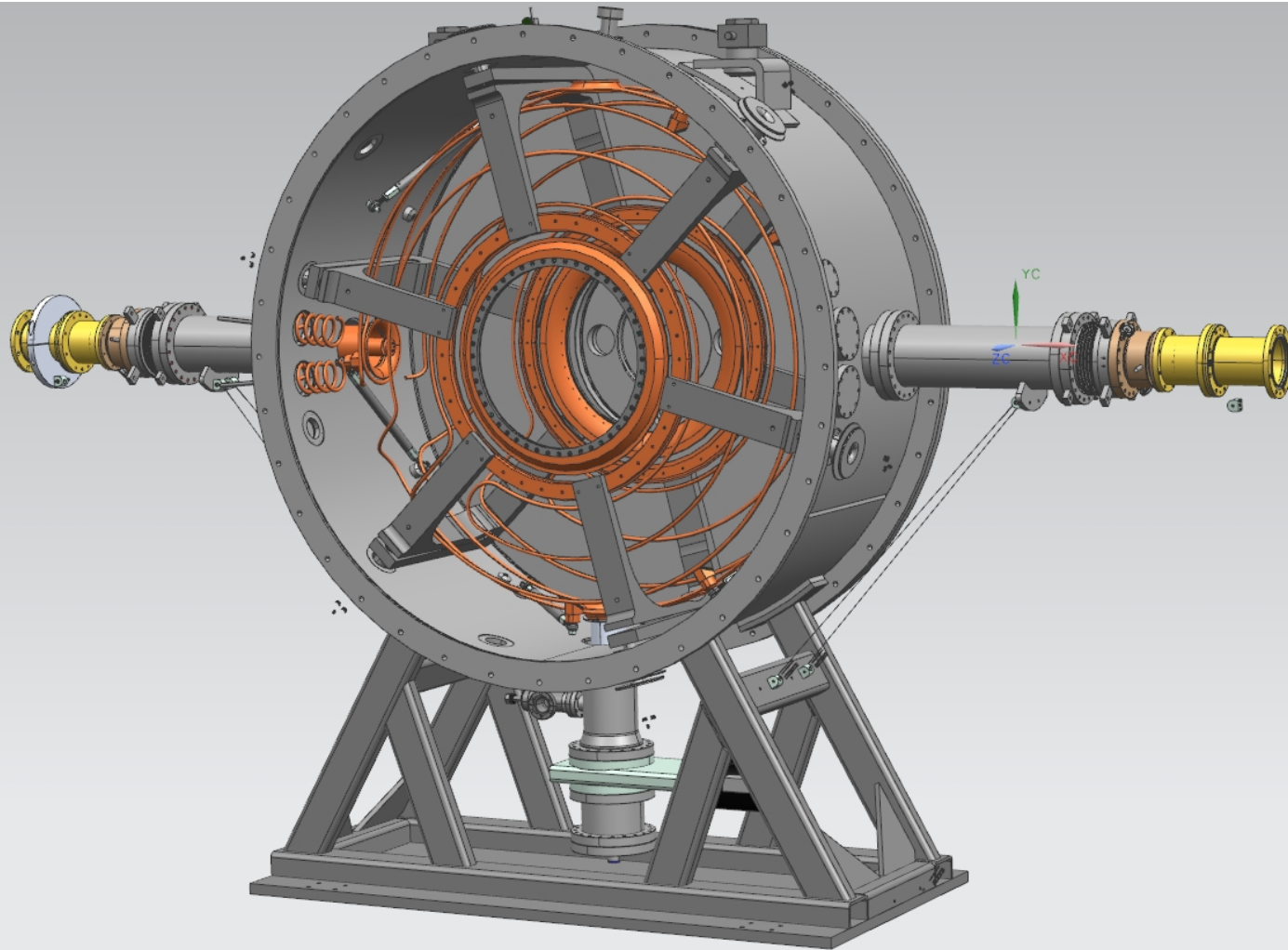


Yağmur Torun
MAP Weekly Meeting
Apr 26, 2014 -- Fermilab

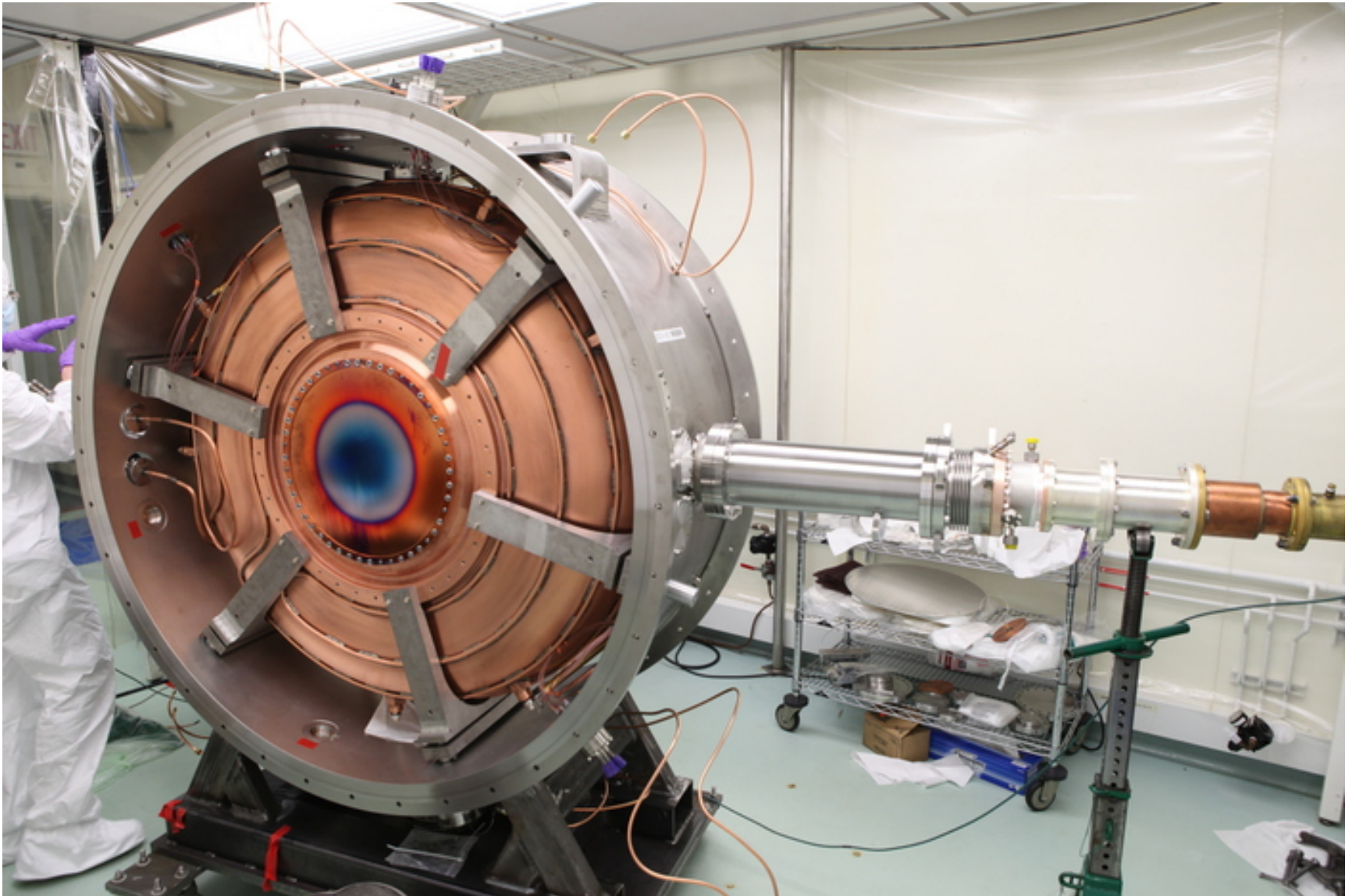
Assembly



Model



Module

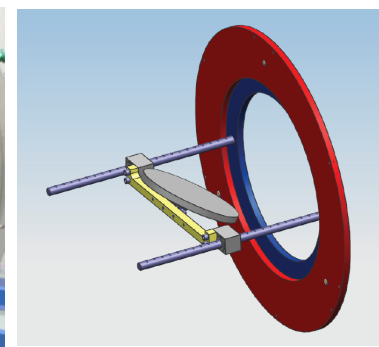
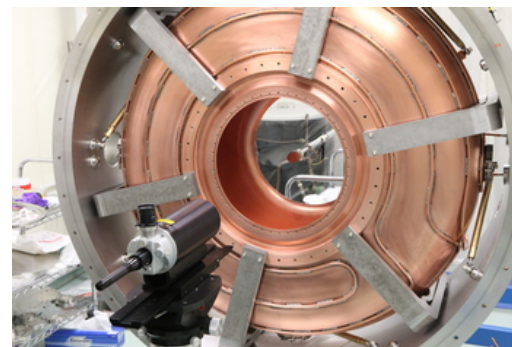
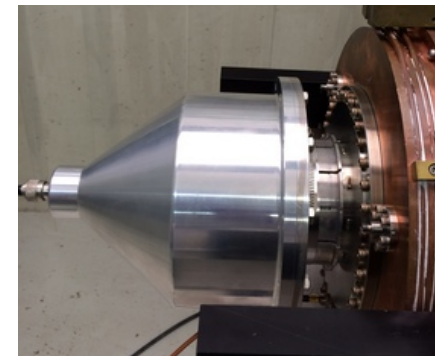
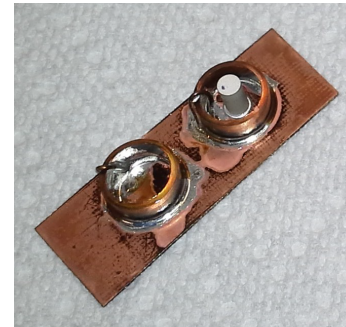
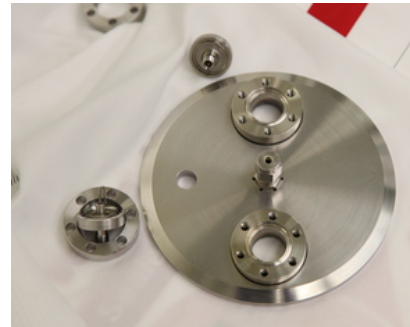


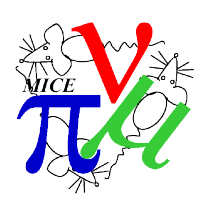
Old prototype cavity

- Removed from MTA hall to make space
- Cavity sealed, crated and placed in storage
- One coupler intact
- Other coupler cut for inspection
 - can be repaired (or cavity powered from one side)
- Support frame and vacuum plumbing also saved
- Could be used as dummy load



- Vessel
 - top plate
 - RF pickups (cavity gradient)
 - tube for cavity vacuum
 - optical fibers (breakdown light)
 - acoustic sensors on cavity/windows (spark localization)
 - vacuum
 - thermocouples on cavity body and windows
 - infrared sensors for Be windows (temperature)
 - Faraday cup (dark current)
- Couplers
 - directional couplers (forward/reflected power)
 - electron pickups
 - vacuum
 - viewports+fibers
- External
 - air pressure (tuner control)
 - water temperature/pressure (cooling)
- Inspection system

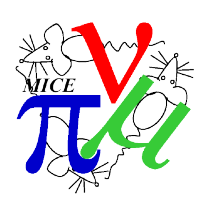




Status



- Major mechanical assembly complete
 - several fixtures built and successfully used
 - cavity installed in vacuum vessel with new struts
- Tuner system installation complete
 - tuner forks trimmed, installed, shimmed on cavity
 - actuators modified/reinstalled
 - transfer function measured
 - L. Somaschini M. Sc. thesis
- Coupler fabrication complete at LBNL
 - couplers installed and adjusted on cavity
- Extensive instrumentation for cavity built/being installed
- RF amplifier controls modified, tested
- Hall infrastructure prepared
 - new overhead crane installed for lifting vessel
 - vacuum, air, water, RF plumbing parts in hand



Schedule



- Installation of module in MTA hall May
- Initial commissioning June
 - couplers will be conditioned on cavity
 - thick/flat Cu windows, no magnetic field
- Workshop (June 2-3, Fermilab)
 - review lessons learned during assembly, commissioning
 - facilitate broader MICE participation in testing at the MTA
- Inspection after first run
- Follow-up running in other configurations
 - thin curved Be windows
 - in fringe field of solenoid
- Access to RF power source constrained by Fermilab Linac operational needs
- Installation providing valuable experience for MICE RFCC module assembly
 - and possibly some LLRF

