OPERATION OF THE CEBAF 100 MV CRYOMODULES MOPLR003

Curt Hovater representing work from the RF, Cryomodule and Operation staff

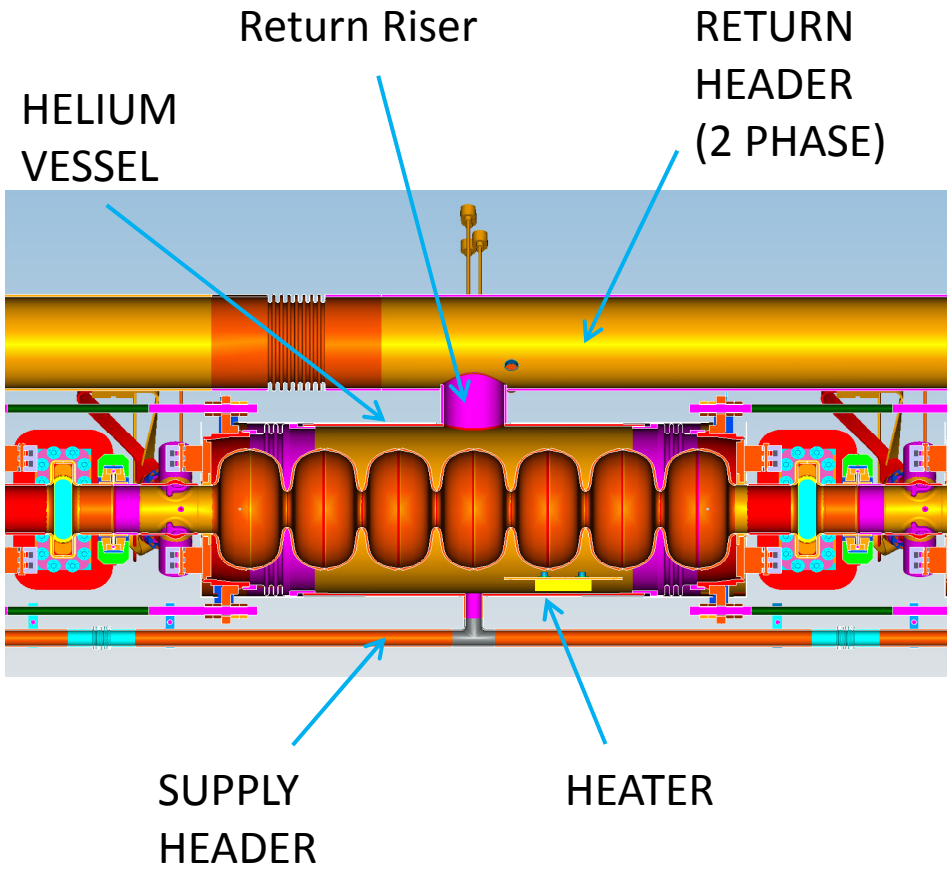
Poster Discussion Topics

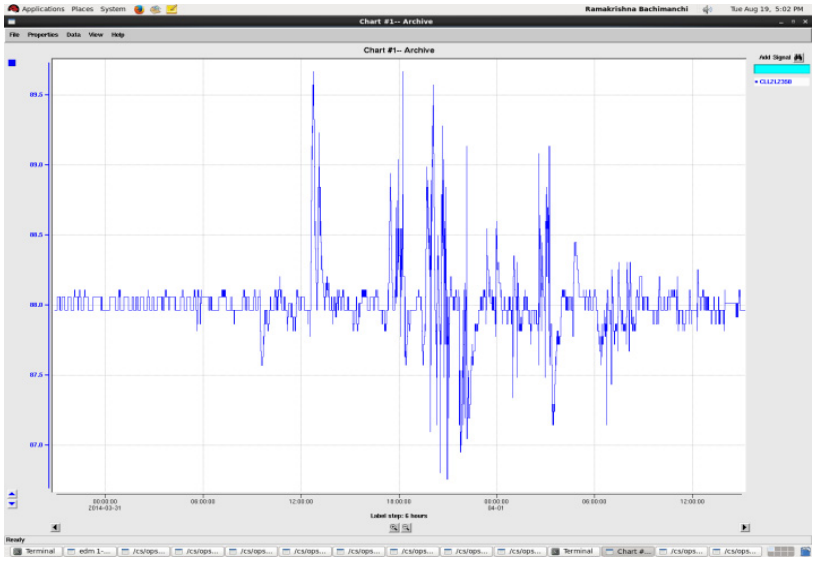
- Cryomodule Performance
- Field Emission
- Cavity Microphonics
- Cryogenic Detuning
- Mitigation/Optimization Efforts

C100 Cryomodule Performance

Cryomodule	Zone	Commissioned Energy	Operational Energy
C100-1	SL24	104 MV	77.1
C100-2	SL25	122	89.6
C100-3	NL22	108	91.2
C100-4	SL22	93	91.5
C100-5	SL23	121	91.9
C100-6	NL23	111	99.4
C100-7	NL24	103	95.9
C100-8	SL26	110	90.7
C100-9	NL25	105	85.0
C100-10	NL26	106	83.5

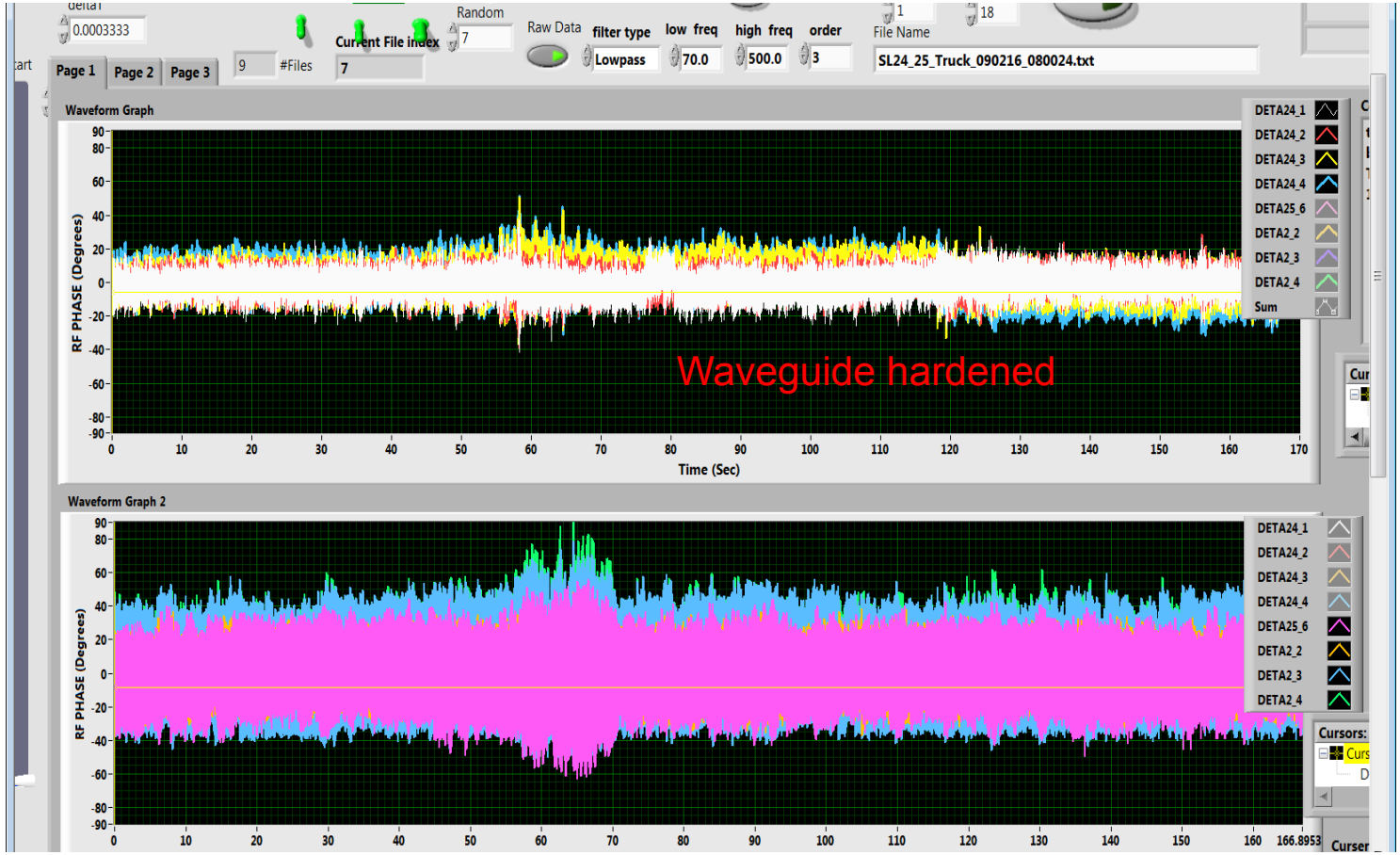
Cryogenic Detuning





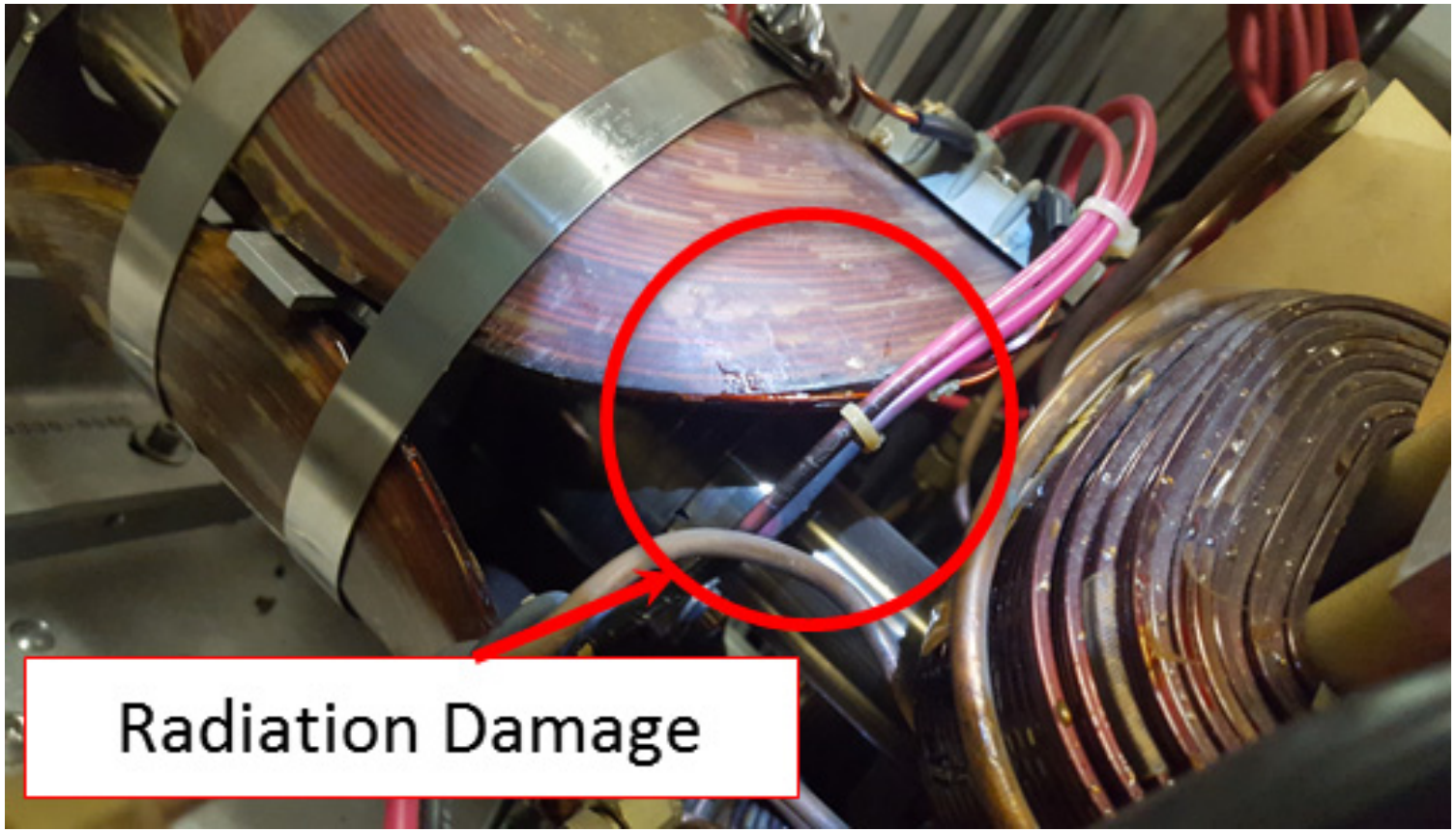
He Liquid Level in a cryomodule as heat was applied.

Cavity Microphonics



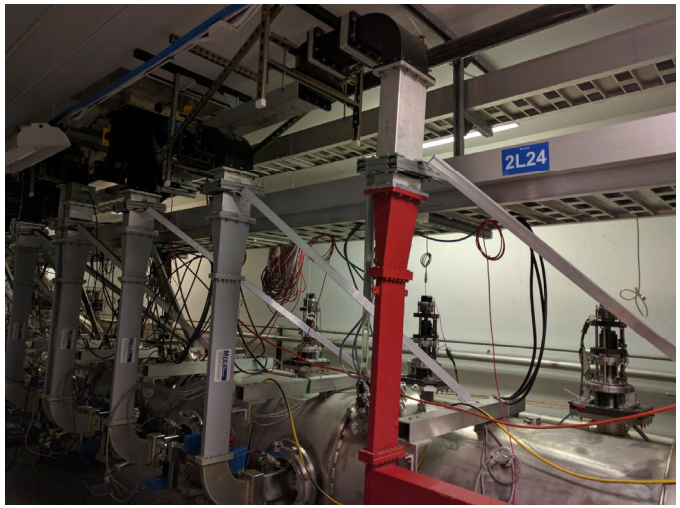
RF detune phase for cavities 1, 2, 3 and 4 for the hardened zone SL24 (upper) and original SL 25 (lower). A liquid nitrogen truck drove down the south linac service road at about 10 mph passing the zone at time equals about 30 seconds

Cavity Field Emission

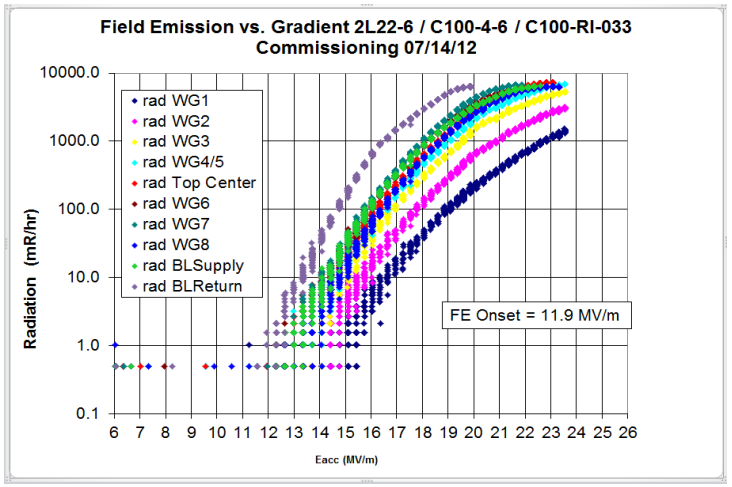


Vacuum cables just down stream from C100 Cryomodule

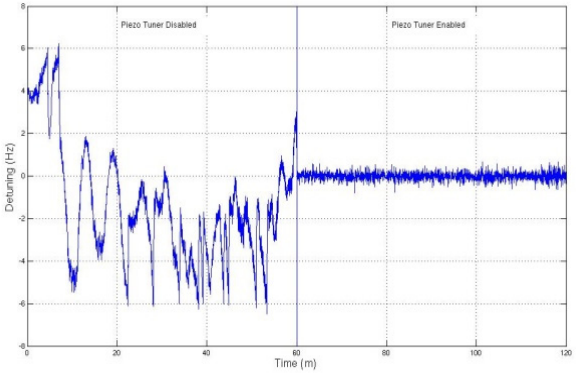
Mitigation/Optimization Efforts



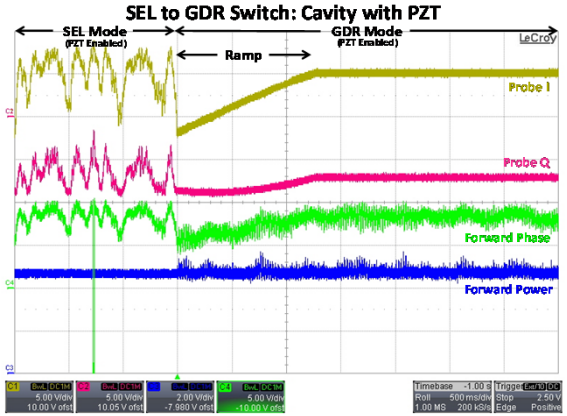
Stiffened waveguide to reduce microphonic effects



In place He processing and developing a field emission model to optimize cavity gradients



Operating piezo tuners on select C100s



Improved cavity turn on and fault recovery algorithm

Thanks for your time.

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