

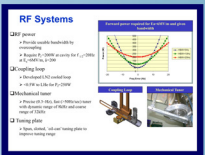
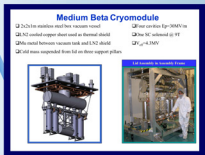
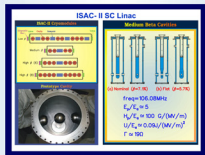
# ISAC - II QWR Cavity Characterizations and Investigations



R.E. Laxdal, B. Boussier, K. Fong, M. Laverty, A. Mitra, V. Zvyagintsev  
TRIUMF, Vancouver, Canada

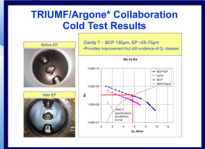
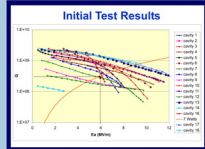
**ABSTRACT**

A heavy ion superconducting linear is being installed at ISAC/TRIUMF. At first stage of the ISAC-II upgrade at TRIUMF will see the installation of 20 quarter-wavelength resonant cavities ( $\lambda_c \approx 0.57 \text{ (0.57)}$ ). The cavities operate on a 500MHz with design peak fields of  $Ep \approx 200 \text{ MeV}$ . Bunches of  $10^{10}$  ions are delivered at an accelerating voltage of 1.08MV at  $\sim 4W$  power consumption. All of the cavities have received BCP processing with two of the cavities requiring an additional electroforming treatment. The cavities have been fully characterized for performance and are presently being prepared in cryomodules for an initial beam test in Dec-2005. The report will summarize the cavity treatment procedures and present the cavity test results, in particular we compare the EP vs. BCP treatment and present data confirming the presence of Q-disease in the BCP cavities.



**Summary of Cavity Testing**

Final Cavities	File	Round
SCB1	1	12
SCB2	1	12
SCB3	1	12
SCB4	1	12
SCB5	1	12
SCB6	1	12
SCB7	1	12
SCB8	1	12
SCB9	1	12
SCB10	1	12
SCB11	1	12
SCB12	1	12
SCB13	1	12
SCB14	1	12
SCB15	1	12
SCB16	1	12
SCB17	1	12
SCB18	1	12
SCB19	1	12
SCB20	1	12



**TRIUMF/Argonne Collaboration Frequency Shift for EP**

- Cavity 11: 100-105 kHz
- Cavity 7: 104-110 kHz

Simulation Results

- EP: 100-105 kHz
- EP: 104-110 kHz
- EP: 100-105 kHz
- EP: 104-110 kHz
- EP: 100-105 kHz
- EP: 104-110 kHz

**Cavity Temperature Sensors**

Final Temperature Sensors Installed on Cavity

- T1: Connected to beam conductor
- T2: Connected to bottom flange of cavity
- T3: Connected to cooling line
- T4: Connected to top cavity flange

