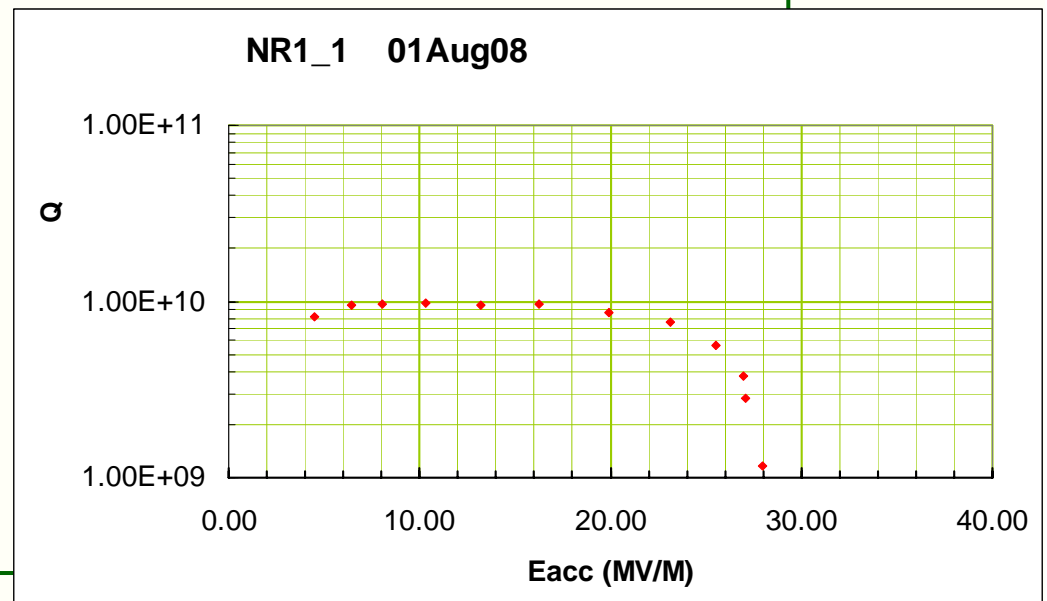


Update on S0 Work in the Americas Region

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- Six Niowave/Roark single-cell 1.3 GHz cavities delivered to Cornell after incoming quality control checks at Fermilab.
- The first cavity was test August 1st after 120 micron BCP.
 - Achieved 28 MV/m. No quench, little or no field emission.
 - Etched in cool acid to minimize hydrogen contamination.
 - No hydrogen degassing; no 120 deg C bake.
- Remaining cavities to be processed and tested in same way to validate fabrication techniques.
 - EP processing will be employed in future to study performance limits.





- **AES single-cell 1.3 GHz cavity (TE1AES004) electro-polished at Argonne July 30th**
 - 65 micron removal; 0.32 micron/minute removal rate.
 - 14 V, 34 A average current; acid temperature = 27 deg C average
 - Cavity transported wet to Fermilab and ultrasonically degreased
 - Presently awaiting availability of A0 high-pressure rinsing system
 - Will then be tested at Fermilab
- **Accel cavity A6 being mounted to vertical test stand**
 - First test of variable input coupler with high-gradient (40 MV/m) cavity
 - Plan to perform complete mode measurements
 - Some trouble achieving leak-tight attachment of input coupler, so increased field emission may be expected
- **325 MHz single-spoke resonator (SSR) was recently tested**
 - Achieved ~17 MV/m briefly before test was terminated due to a cold leak at RF feedthrough
 - Previous test at ~13 MV/m; design calls for 10 MV/m
 - Will be repaired and retested
- **Planning to perform EP on another single-cell cavity in ~2 weeks**



A brief summary of ILC 9-cell accomplishment since budget unfreezing:

- **A11: 2 EP cycles (bulk + light), cavity under vacuum in dewar waiting LHe for VT.**
- **A12: 2 EP cycles (bulk + light), passed ILC spec, max. Eacc 37 MV/m.**
- **A15: 2 EP cycles (bulk + light), quench limit 17 MV/m, T-mapping and optical inspection found a 200 micron defect near cell#3 equator weld.**

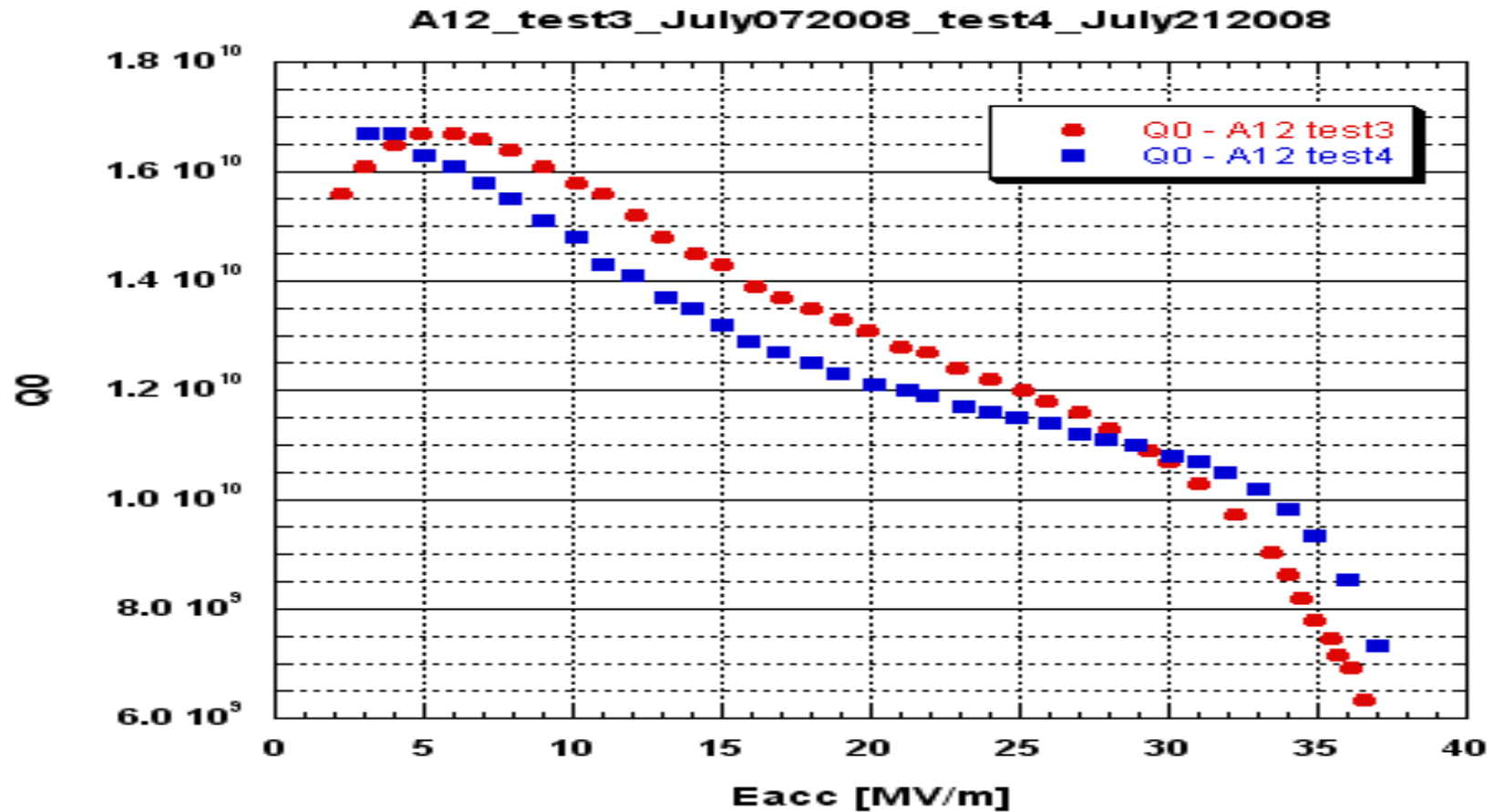
- **In total, 6 EP cycles were accomplished, 9 VT cycles were accomplished (including some cycles for testing A7 of ANL EP'ed surface and some cycles for T-mapping).**

Top priority now:

- **First RF test of A11.**
- **Tune A12 for frequency and re-clean (ultrasonic cleaning and HPR) and ship to FNAL under vacuum**

Accel cavities A13 and A14 received from Fermilab.

A12 Q0 improved $> 8E9$ at 35 MV/m after re-HPR
max. Eacc 37 MV/m



Some remaining FE

A15 cell#3 defect outside equator weld at boundary of heat affected zone
T-mapping found a hot spot in this region correlated to quench at 17 MV/m

