

Americas S0 Status Report

C.M. Ginsburg (Fermilab)
for Mark Champion

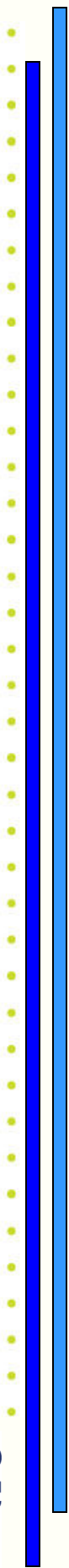
October 27, 2009

- **A9**
 - This cavity is currently limited to 25 MV/m; limitation is in the first end cell next to the long beam tube (cell 9)
 - Defect on the equator weld in the first cell next to the long beam tube and two scratched irises
 - Plan is to tumble and reprocess the cavity early next year
- **TB9ACC010**
 - Fresh cavity not tested yet
 - Plan: final micro-VEP and test mid-Nov
- **TB9AES005**
 - Limited to 20 MV/m at JLab
 - Plan: repair defects by tumbling
- **Rebuild/rework of ERL injector cryomodule interferes with S0 work, but should start to wrap up in the next couple of weeks to a month.**

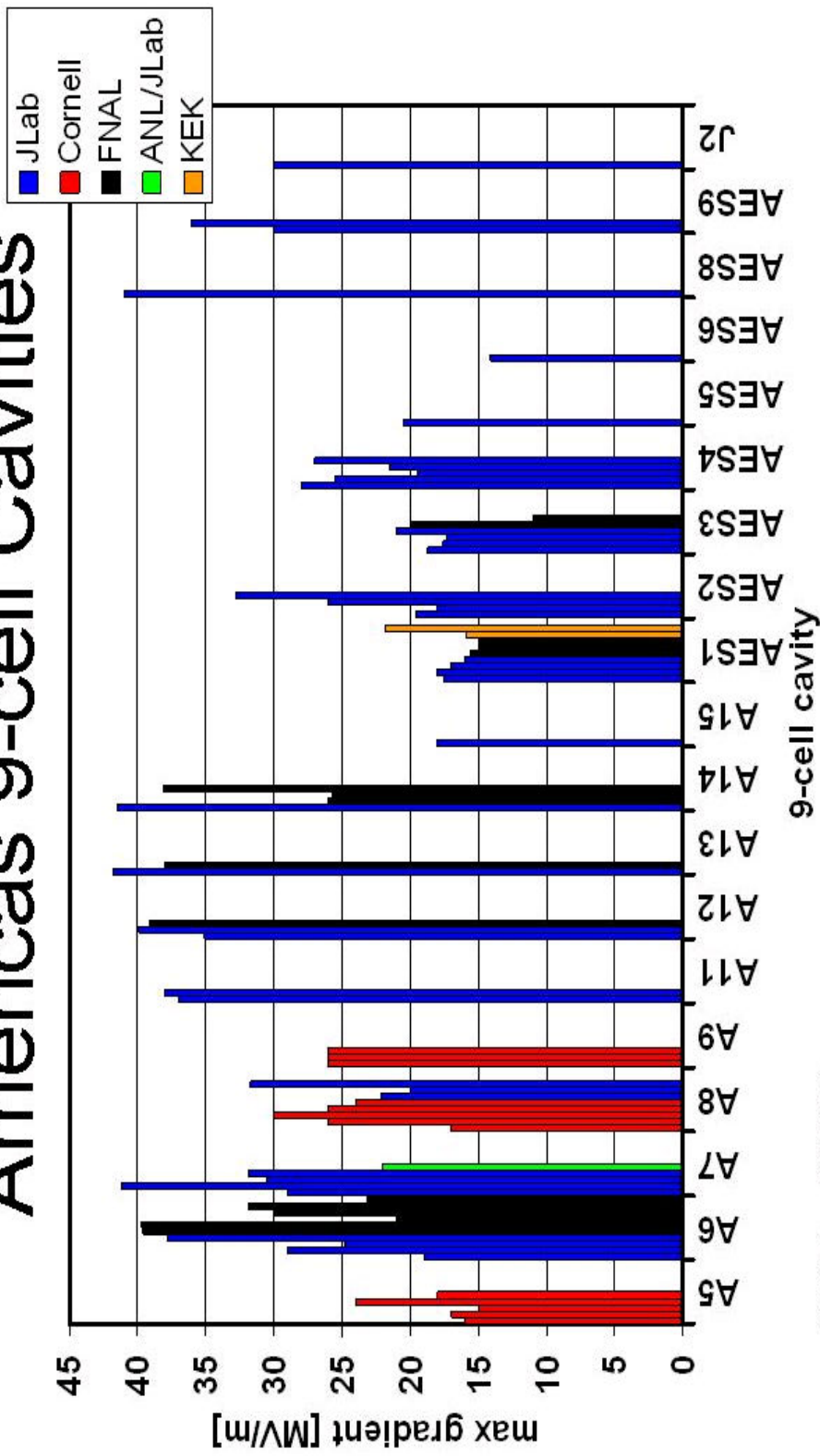
- **Bare cavities process/test**
 - Vertical test facility coming back online now after ~6 week shutdown for civil construction of two more cryostat pits
 - TB9ACCC017
 - Fresh cavity fully processed at ANL/FNAL except 600C HT at JLab
 - To be tested today
 - **ACCEL6 – with help from JLab**
 - Best test 40 MV/m (JLab)
 - Field emission introduced – variable coupler installation (?)
 - Many tiny bumps observed in optical inspection
 - Most recently, light EP at ANL/FNAL & sent under vacuum to JLab
 - Re-test at JLab showed 28 MV/m (Q-slope) without field emission
 - Second 9-cell in a row assembled at ANL/FNAL with no measured FE!
 - To be 120C baked and retested (JLab)
 - **ACCEL7**
 - Best test 41 MV/m (JLab)
 - Limited by Q-slope (22 MV/m) after non-standard EP (1st one) at ANL/FNAL facility
 - To be tested in about one week, depending on crane availability (interference with magnet test program)
 - **Dressed cavity #1 is next: mid-Nov**

- Dressing cavities for S1G/CM2
 - AES001, AES004 (prototype dressing complete)
 - AES004 will be horizontally tested
 - TB9ACC011, TB9ACC013, AES002 are dressed
 - TB9AES008, TB9AES009 are in process of being dressed
 - A8 is next (arriving soon from JLab)
 - I think TB9ACC011 and AES002 will be vertically tested and eventually become S1G cavities – depends on performance

- AES9 second-pass processing and testing, reached 36 MV/m at Q0=9E9, No field emission at highest field.
- AES6 second-pass processing and testing to verify the 800Cx2hr effect. Quench field raised to 20-22 MV/m (was 14 MV/m).
- New 9-cell Cavity AES10 received from FNAL, 10 μm BCP, heavy EP and 800Cx2hr heat treatment done. Light EP planned for Thursday October 29.
- Received A6 under vacuum from FNAL. RF tested to 28 MV/m without field emission. 120Cx48hr bake is now completed. Re-test Tuesday October 27.
- First Local re-melted 1-cell cavity was tested – raising the quench gradient from 19 MV/m to 27 MV/m.



Americas 9-cell Cavities



C.M. Ginsburg 15.Oct.2009