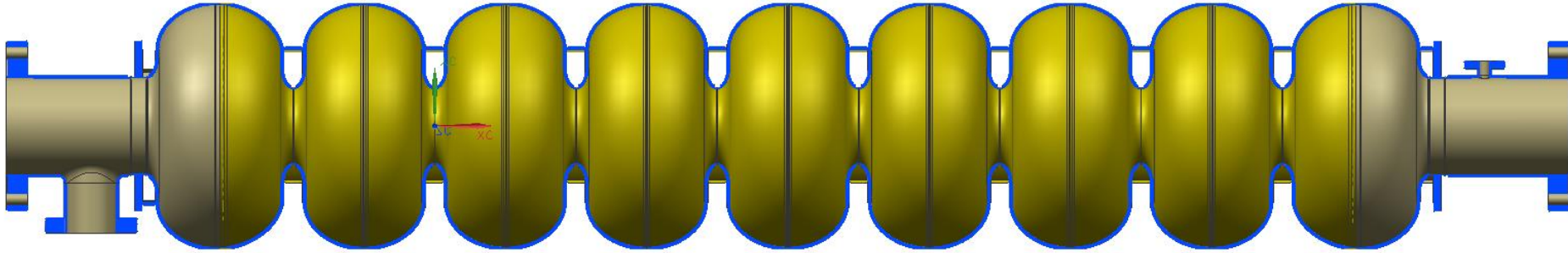

JLab Update

Rongli Geng

April 16, 2013

1st LCC ILC Cavity Group Meeting

JLab Status: 9-cell Cavities



- New 9-cell Low-Surface-Field shape (SLAC design) cavity.
 - All niobium cups re-stamped, heat treated in vacuum furnace for stress relief, weld prep machining completed, CMM inspection completed
 - Half cell frequency measurement fixture and stiffening machining fixture completed.
 - Work will stop after half cell frequency measurements due to budget.
 - First Cu prototype cavity mechanically polished to mirror finish. Coated with niobium film at AASC. RF testing on-going.
- Two large-grain ICHIRO shape cavities processing and testing re-started (JLAB SRF facilities including EP processing, HPR, clean room assembly and VTA testing are back to business)
- 9-cell cavity NR1 (first “mirror finish” 9-cell polished using JLab in-house mechanical polishing machine) processing and testing stopped due to budget.

JLab Status: Field Emission and High Q0 at 45 MV/m

- **X-ray mapping with 9-cell cavity (RI23) new test with additional diode rings completed on April 12, 2013**
 - **New data in good agreement with previous data in localizing the dominant field emitter.**
 - **The cavity is warming up now.**
 - **Optical inspection at predicted location of field emitter to be carried out.**
- **Two single-cell large-grain niobium cavities under processing and testing for high Q0 at ultra high gradient regime of > 45 MV/m**
 - **Cavity PJ1-1**
 - **In collaboration with Peking University, Ningxia Large grain material**
 - **Baseline test after BCP etching only 28 MV/m, quench limit**
 - **Second test is next week after more BCP etching**
 - **Cavity G2**
 - **Mirror finish mechanical polishing completed at JLab**
 - **Light EP completed at FNAL**
 - **First RF test in two weeks**