802 MHz Cavity developments

News from

- Rama presented FCC-hh, FCC-ee, FCC-he RF http://srf2015proc.triumf.ca/prepress/talks/frba04_talk.pdf
- 401 MHz and 802 MHz are baseline – different for protons (similar LHC), electrons with for Z-peak (45.5 GeV, 1.45 A), electrons for $t\bar{t}$ (175 GeV, 7 mA)
- Collaboration with LNL and STFC established – one study on seamless forming by spinning: example studied to verify technique: 802 MHz 5-cell LHeC type (large inner aperture 160 mm)
- Other R&D: rapid forming

Electro-hydraulic Forming

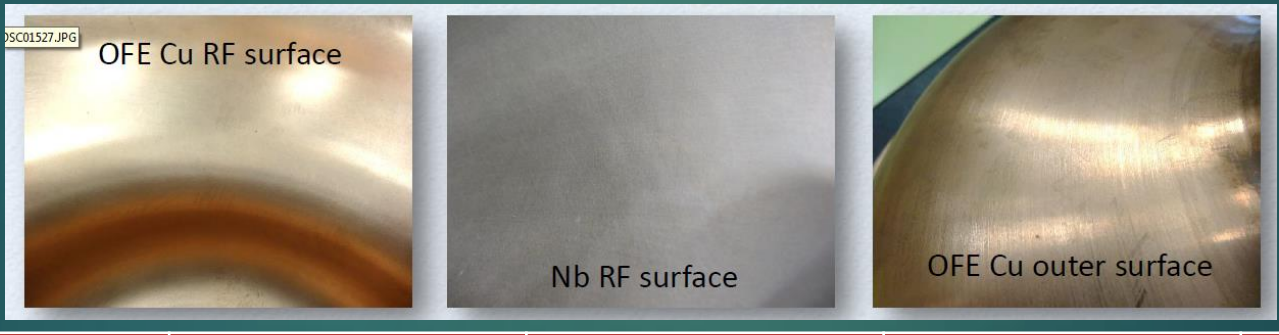
Said Atieh (CERN), collaboration Bmax (www.bmax.com)
http://srf2015proc.triumf.ca/prepress/talks/thaa05_talk.pdf

3 Cu OFE & 2 Nb half-cells formed

- Good fit in between the experimental results and the simulation
- Achieved shape accuracy: ± 200 μm
- Good reproducibility

Initial results:

- Excellent shape accuracy ($\pm 200\ \mu m$)
- no spring-back
- conservation of surface roughness
- works with Cu and Nb



Material	Ra sheet [µm]	Rt sheet [µm]	Ra HEF [µm]	Rt HEF [µm]
Cu OFE	0.2	3.5 … 5.8	0.2	2 … 12
Nb	0.8 … 0.9	7 … 11	0.9 … 1	8 … 11

… and also:

- CERN 704 MHz cavity reached 21.7 MV/m with acceptable field emission!
- … we're improving our know how and skills in SRF technology!