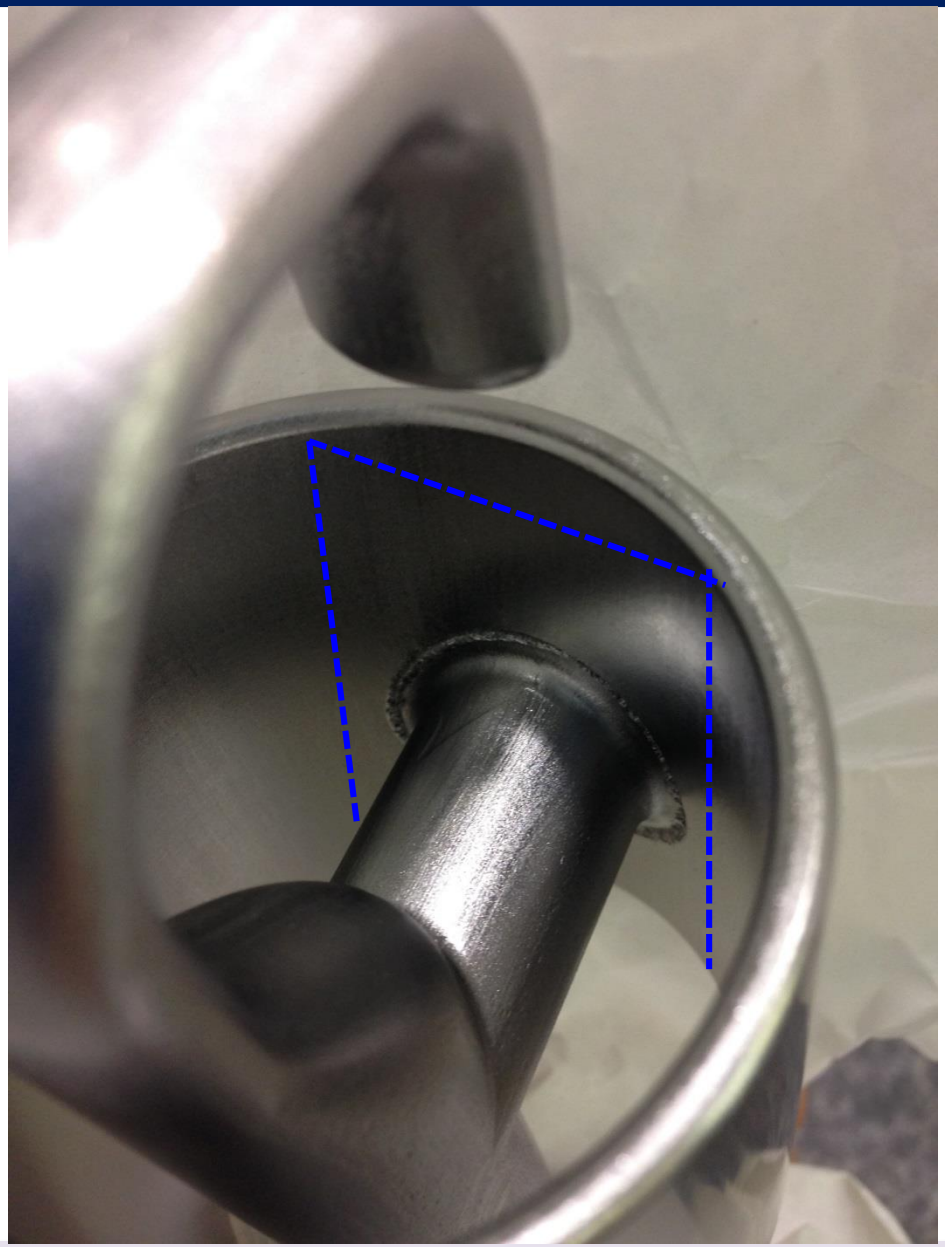
Improvements of DQW cavity

#	Issue	Status	Who
1	Flat region for trim tuning		
2	Connection of inductive rod and capacitive cylinder of HOM filter (see slide 2)		
3	Change HOM filter to increase damping of 930 MHz makes HOM filter longer → requires integration into cryomodule		
4	Review HOM tubes location for enhanced damping		
5	Optimize PU and damping for 1.7 GHz		
6	Reinforcement of end cap subassemblies to avoid deformation during W03 welds		
7	Port-cavity interface (see slide 3)		
8	Deformation of end cap subassemblies due to trimming (the part gets warped)		
9	Enhanced trim tuning clamp, maybe with “keys” to aid alignment of subassemblies during trim tuning measurements		
10	Design dedicated “origami” Nb covers (see slide 4)		

HOM filter after nominal 100 um

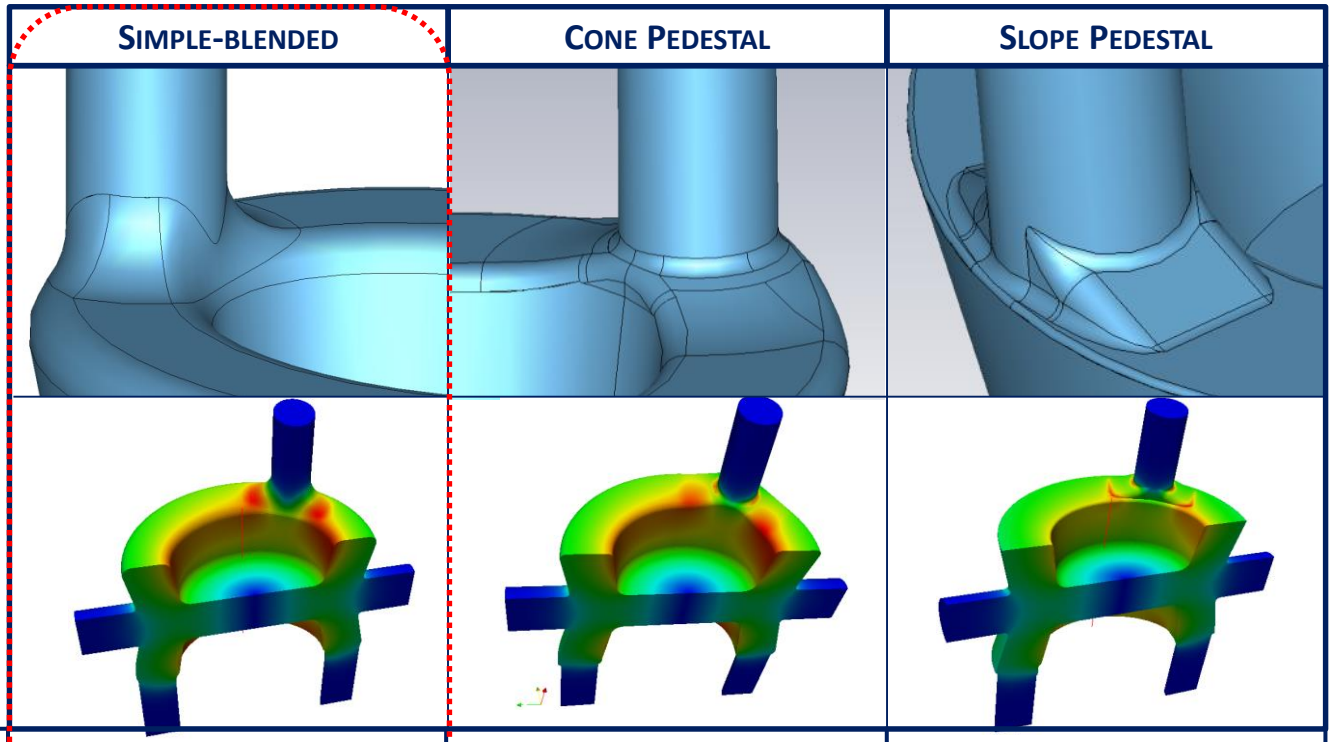


DQW cavities for SPS tests – *improved design*

LARGE APERTURE PORT-CAVITY INTERFACE *to reduce center offset and peak surface magnetic field.*

The ***simple-blended model*** *was chosen due to* ***reduced*** *peak* ***surface magnetic field*** *and* ***simple manufacturing****.*

Elliptical-shaped *cavity shows lower Bpk than racetrack-shaped cavity.*



	SIMPLE-BLENDED	CONE PEDESTAL	SLOPE PEDESTAL
E_{max} [MV/m]	39.6	38.8	38.1
B_{max} [mT]	69.3	69.8	89.7
$\mathcal{O}_{field}$ [mm]	0.51	0.62	0.53

* Values scaled for Vt=3.3 MV. ACE3P Omega 3P simulations.

Niobium covers for cavity ports during high-T treatment