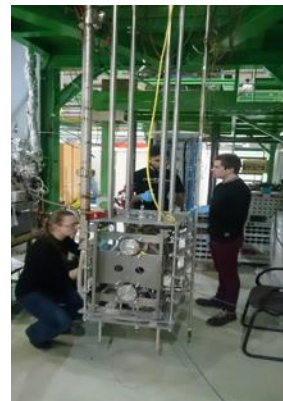


# SPS Cavity Results

Nominal  $V_{\text{kick}} = 3.4 \text{ MV}$ ,  $R_s = 10 \text{ n}\Omega$

		DQW #1 (CERN)	DQW #2 (CERN)	DQW #1 (USLARP)	DQW #2 (USLARP)	RFD #1 (USLARP)	RFD #2 (USLARP)
Max Volt	[MV]	<b>5.04</b>	<b>4.8</b>	5.8		4.4	5.75
$E_p, B_p$	[MV/m, mT]	56, 109	54, 103	65, 125		42, 73	56, 96
$R_s$ min	[n $\Omega$ ]	10	10	9		11	7.6
$R_s, 3.4\text{MV}$	[n $\Omega$ ]	15	18	15		13	8.2
FE onset	[MV]	4.0	3.5	4.5		No FE	4.5

CERN DQW



USLARP DQW & RFD



Tested USLARP DQW #1 with HOM coupler which quenched at 2.8 MV (cause under investigation)

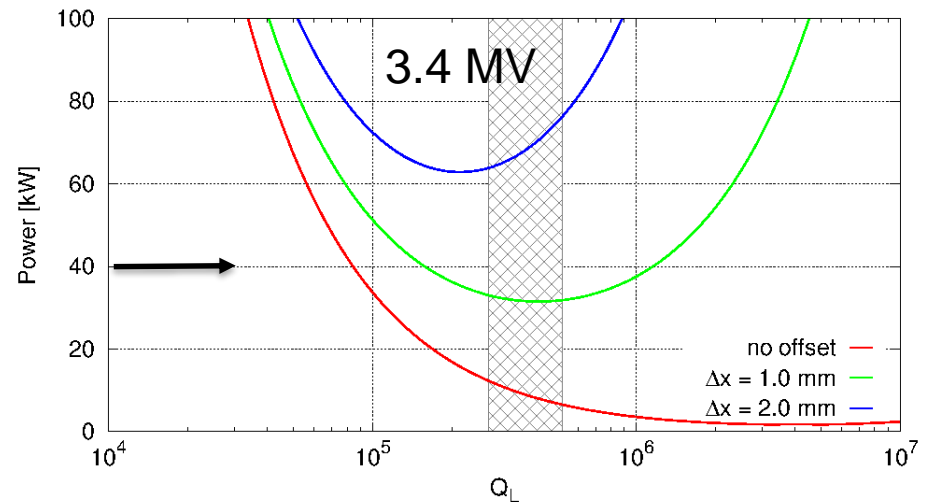
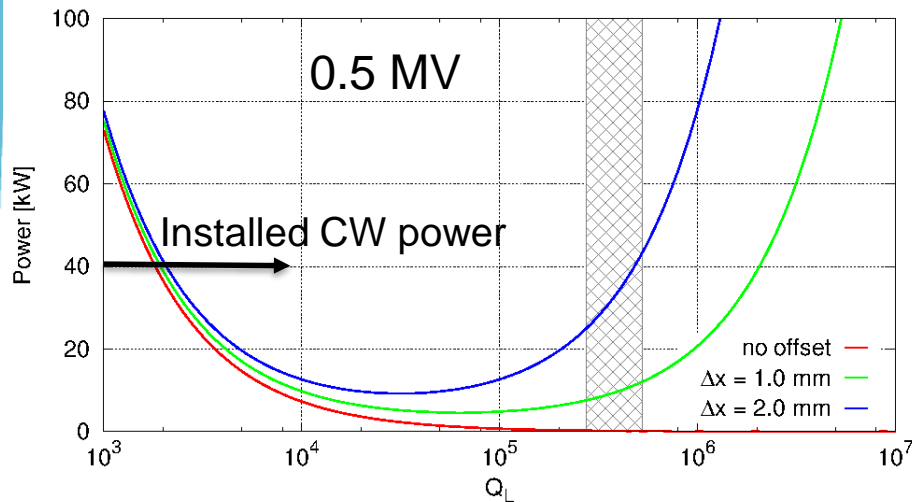
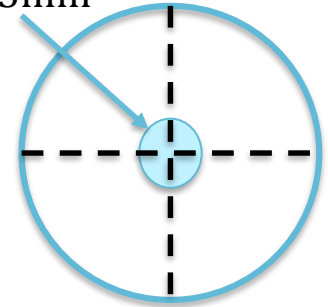
# RF Power with Offsets

Beam induced voltage:

$$\Delta V = I_b \cdot \frac{R_T}{Q_0} \cdot Q_L \cdot \Delta x$$

$I_b = 1.1 \text{ A}$ ,  $R/Q = 429 \Omega$ ,  $\Delta f/f = 50 \text{ Hz}$  (microphonics)

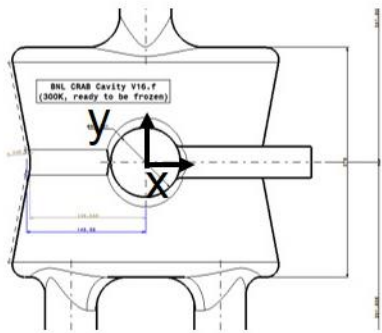
cavity-cavity mechanical offset  $\sim 0.5 \text{ mm}$



- Installed power is limited to 40 kW after C&S review
- If orbit transients are in the  $10 - 100 \mu\text{s}$  level, then the power system can compensate them.

# Electrical Center Measurements

- 3-axis bead-pull for electrical centre measurement and azimuthal analysis for RF multipoles + Metrology of the capacitive plated
- Symmetry of the poles very good and within the measurement accuracy. The cavities will be aligned in the CM after final metrology & cross with beadpull measurements
- We expect to be better than 0.5mm



Multi-axis bead-pull test stand

