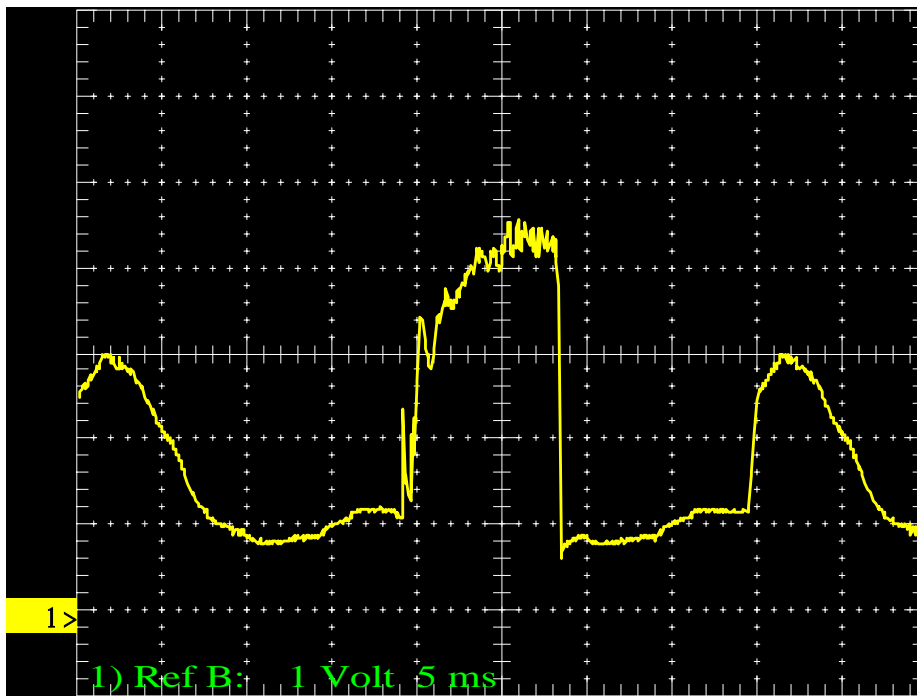


Anode current monitor 2RF Sys 5, 2A/Volt, 7kV peak on gaps.  
 With and without beam 2.2e13ppp. 30 May 2005  
 Higher bandwidth ALC in use. LR  $\sigma=2200 \mu\text{Sm/cm}$



Anode current monitor 2RF Sys 5, 2A/Volt, 10kV peak on gaps  
 Central pulse with Beam  $\sim 1.5 \times 10^{13}$  ppp. Friday 9 Sep 2005.  
 LR  $\sigma=230 \mu\text{Sm/cm}$

## Liquid Resistor Values

Tube radius 1cm

Tube lengths ~25 cm (2 tubes in parallel)

@  $\sigma=2200 \mu\text{Sm/cm}$                        $R=1.81 \text{ k}\Omega$   
@  $\sigma=230 \mu\text{Sm/cm}$                           $R=17.31 \text{ k}\Omega$

With 1 LR on each gap Impedance due to LRs is  $0.9\text{k}\Omega$  and  $8.6\text{k}\Omega$

## Cavity Q and Impedance

APS current of 10A suggests  $I_a = 31 \text{ A ptp}$  at  $V_{\text{ptp}}$  of 14kV  
i.e. a cavity impedance of  $450 \Omega$  including the LRs  
or a cavity impedance of  $900 \Omega$  without the LRs  
giving a Q of  $\sim 900/23 = 38$

APS current of 6A suggests  $I_a = 19 \text{ A ptp}$  at  $V_{\text{ptp}}$  of 20kV  
i.e. a cavity impedance of  $1.1 \text{ k}\Omega$  including the LRs  
or a cavity impedance of  $1.3 \text{ k}\Omega$  without the LRs  
giving a Q of  $\sim 1300/23 = 56$

Low power measurements of Q have shown values up to 170.

Cavity BW to phase and amplitude modulations =  $\sim F_0/2Q$   
i.e. a min value of 7.6 kHz.

An appropriate value for the LRs could be 0.5 x the current value ie a conductivity of 400 – 500  $\mu\text{Sm/cm}$ , giving an individual value of 8 -10k $\Omega$ .

## Beam Pulse Harmonic Content

Harm No	1	2	3	4	5
Amplitude	1	0.79	0.58	0.32	0.11

Pulse shape measured at 9.0ms