

BOOSTER DARK CURRENT. REFINED

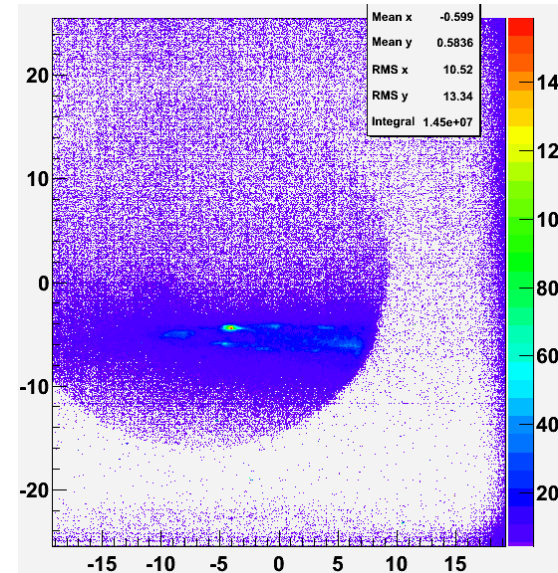
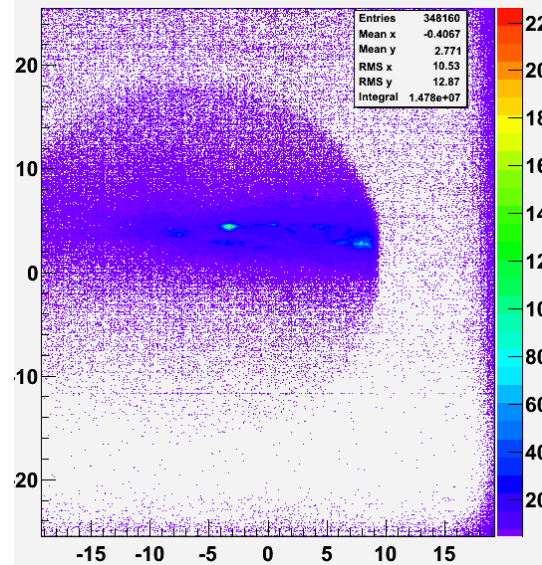
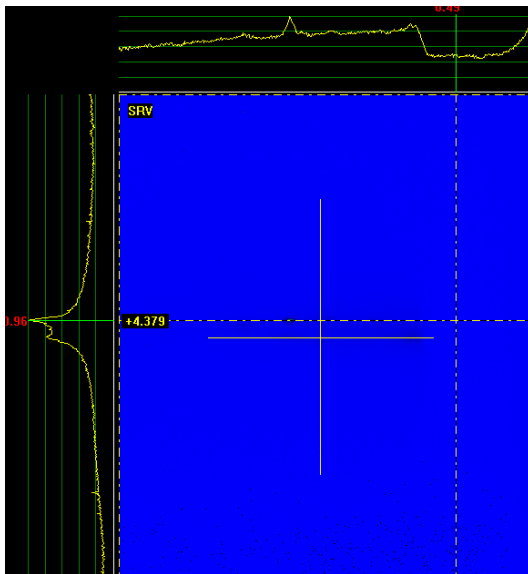


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PITZ Physics Seminar,
2012-10-25

> Using steerer High1.STA1 (=LowSt6)

- Dark current was focused using High1.Q1 and High1.Q3 to a characteristic shape with a hot spot on it.
- The position of the hot spot was measured for different steerer currents

Momentum(hotspot)=22.57 MeV/c @ 6.6 MW



Cavity:

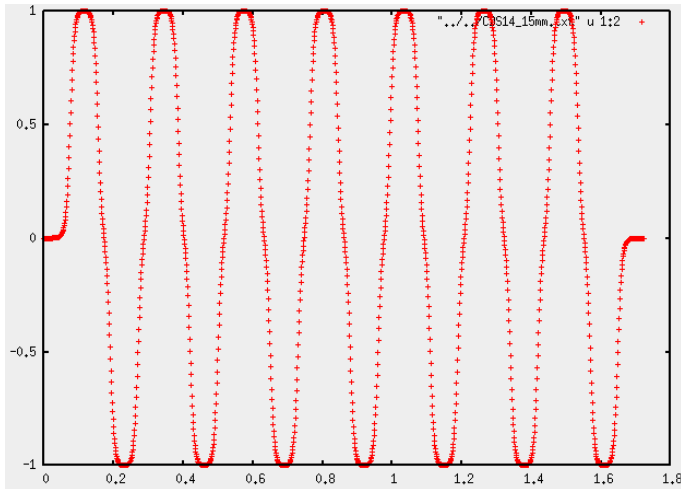
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Reading cavity field data from: CDS14_15mm.txt
Cavity Frequency                f = 1.300 GHz
maximum gradient                 26.00 MV/m
at                               0.2302 m
estimated average gradient      11.78 MV/m
nominal phase                   96.00 deg
    
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$E_{av}/E_{peak} = 0.45$

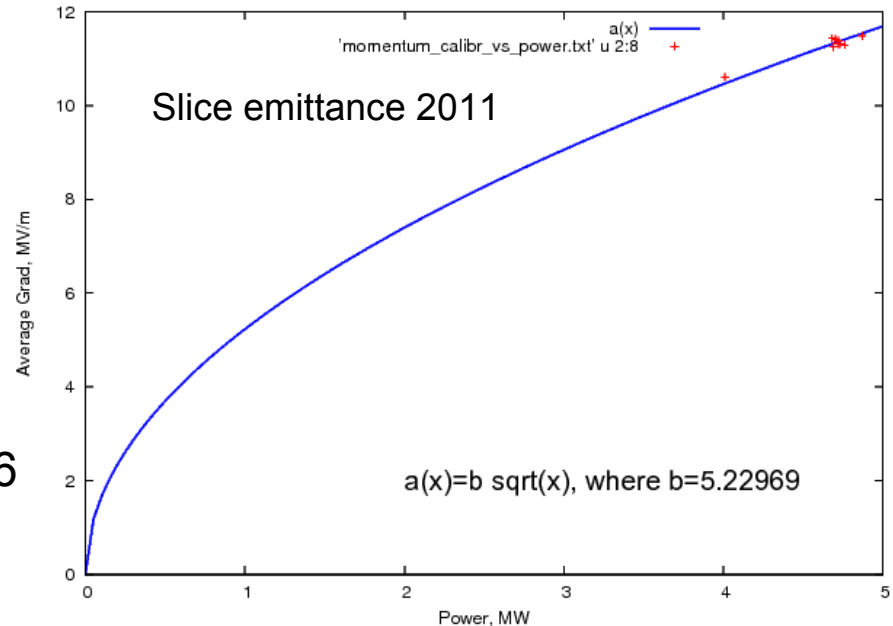
ASTRA CALCS SINUSOIDAL and the whole length of field file for the estimation

For a sinusoidal voltage:
 $E_{av} = 0.5 * E_{peak}$

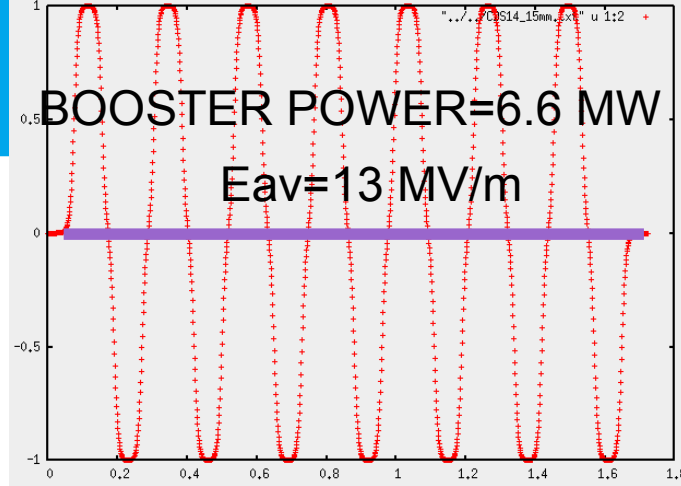


1. Integration → 0.54
2. Astra Single particle → 0.54

Troitsk cold calibration: $b=5.06$

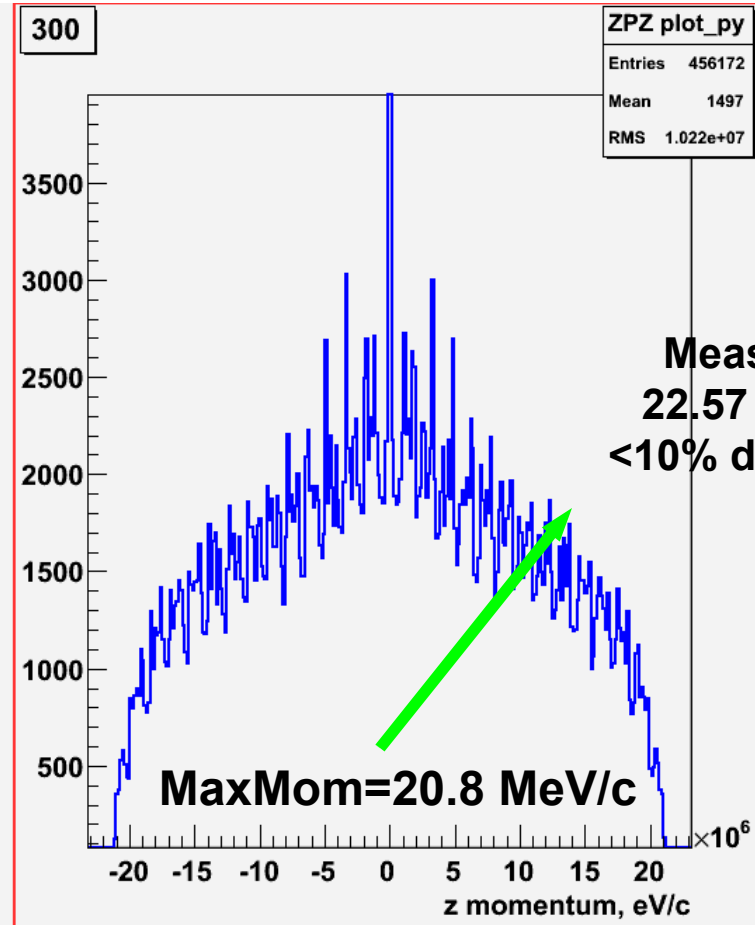
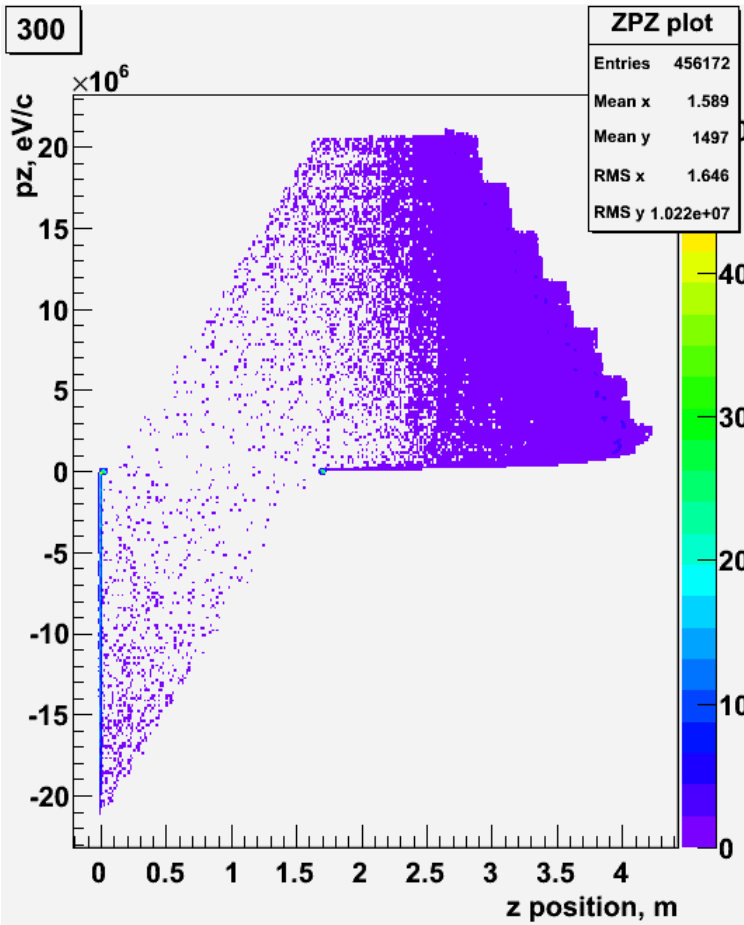


> DC Spectrum



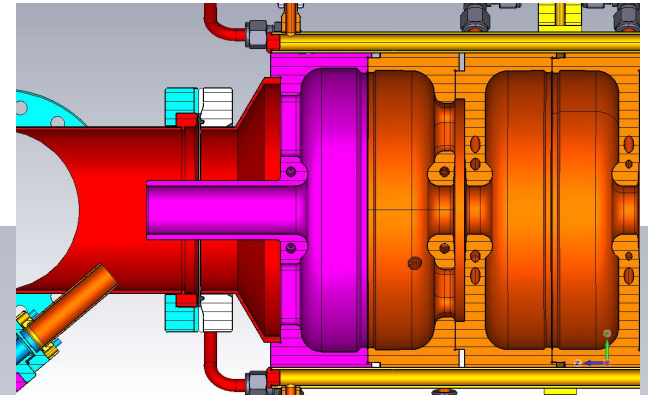
Combined phases
-180 to 180 deg

Synchronous particle
MaxMom=21.4 MeV/c



> To use the field probes as e-detectors

- Apply voltage
- The current is proportional to the electron density



V. Paramonov: The antennas are hidden in the drilling quite deep and in a periphery part of the cell, it makes no sense to use them as peak-ups