Test Beam Analysis

Progress Report

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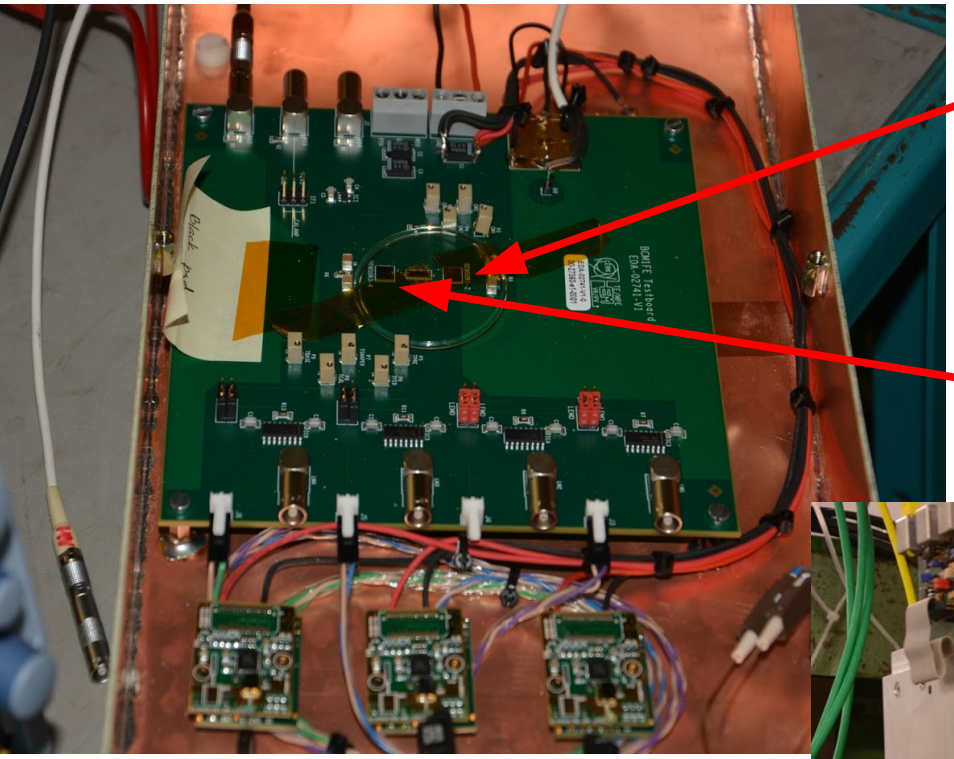
CMS/FCal Meeting
Zeuthen 14.04.2014

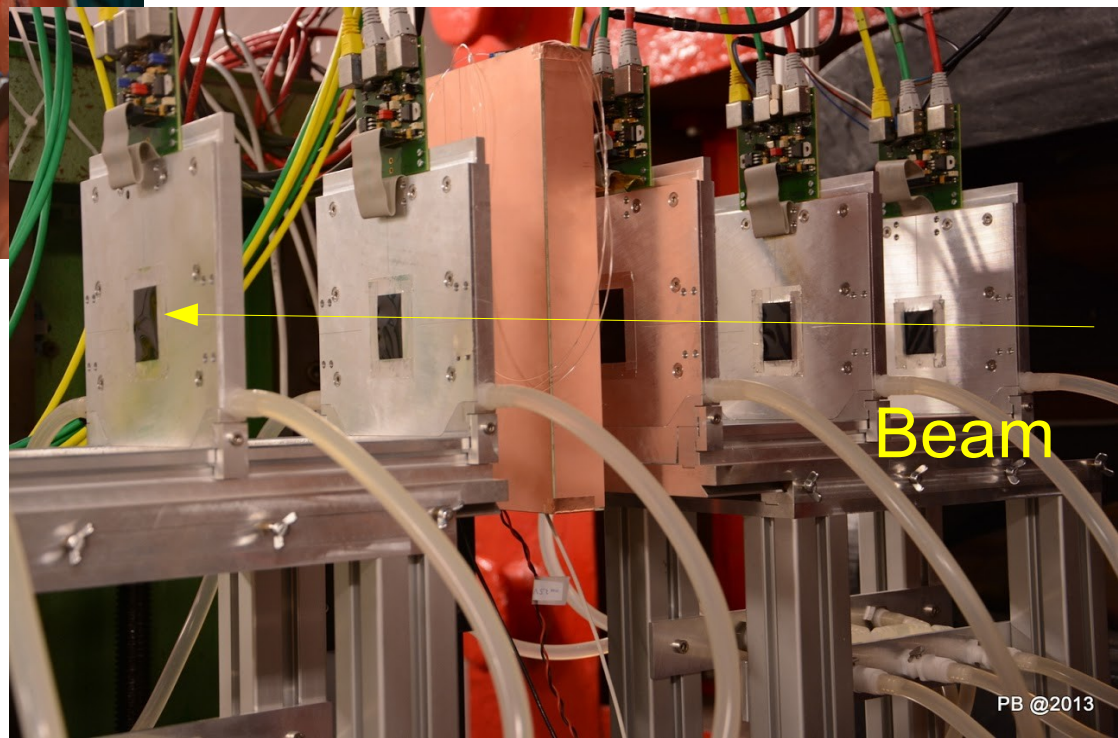
HELMHOLTZ ASSOCIATION

DESY

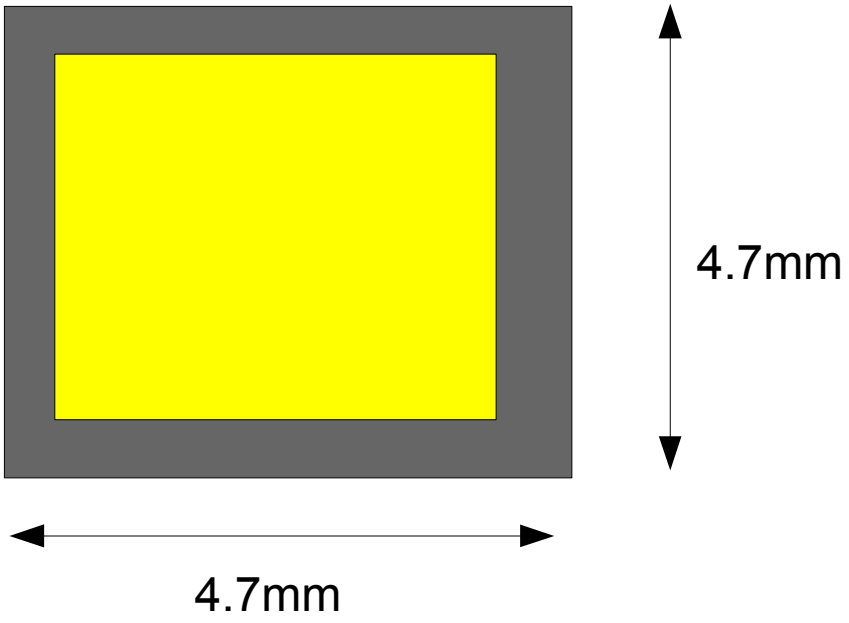
Setup

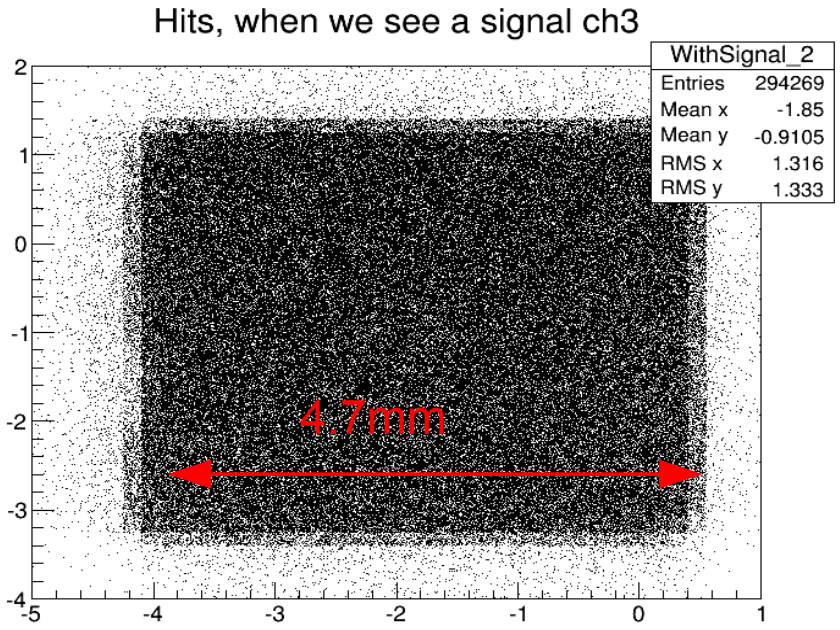


- 1 pad diamond
  - Reference diamond
  - CH3
- 2 pad diamond
  - For upgrade
  - CH1 & CH2

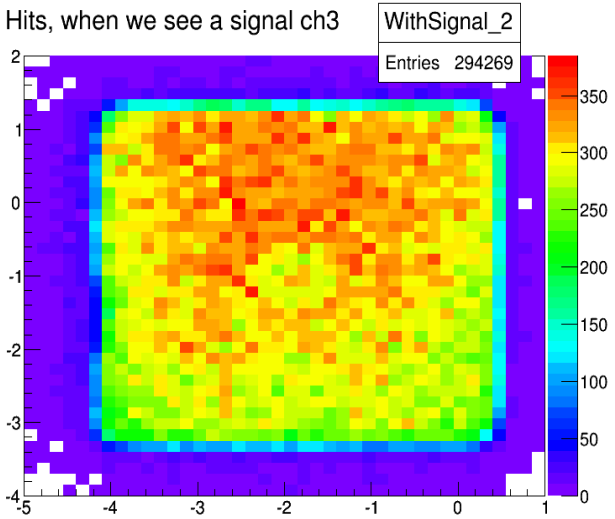


One Pad Diamond - Geometry

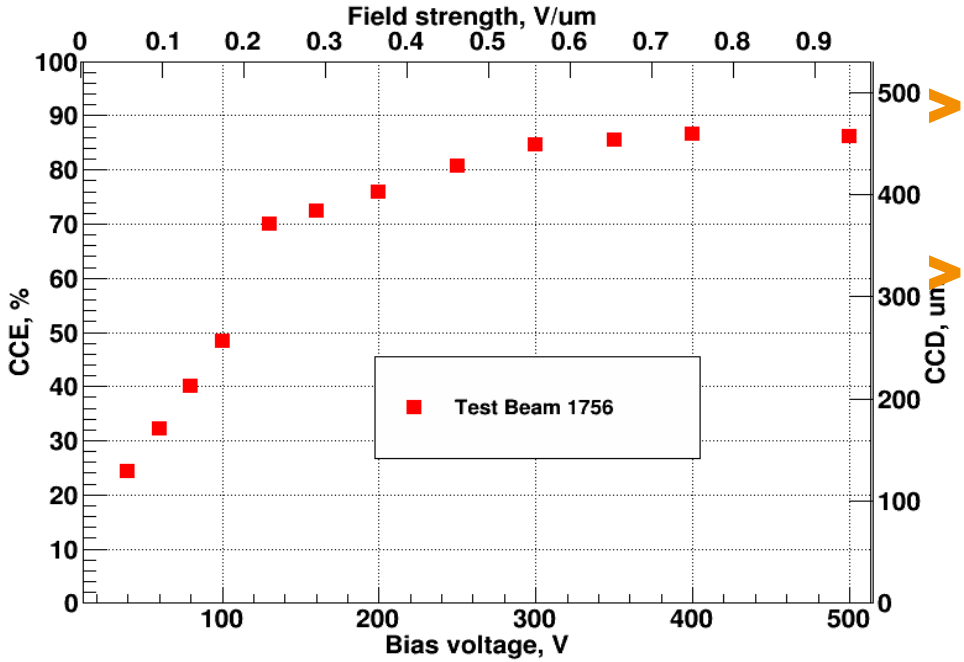




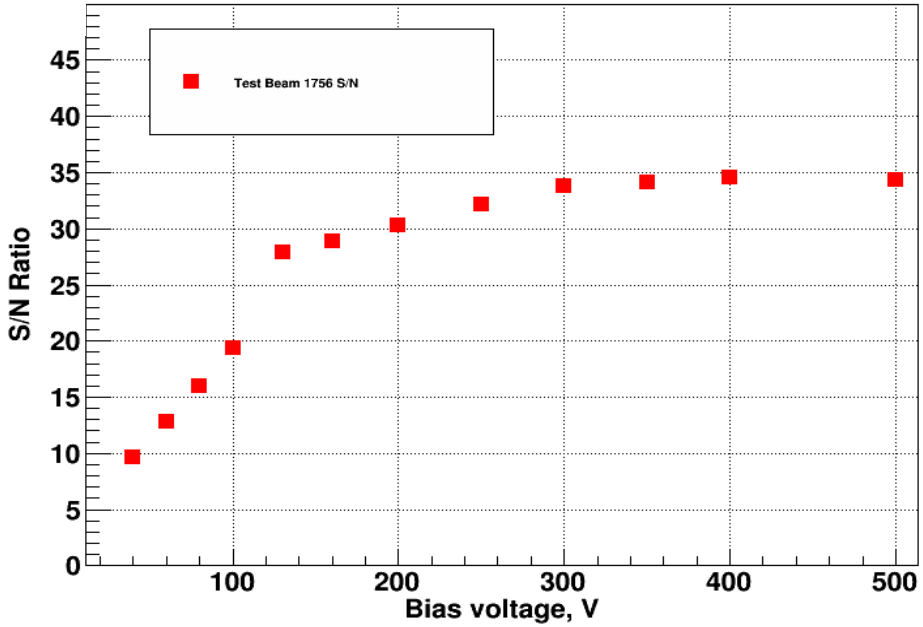
- Diamond is clearly visible
- Small area between end of metallization and diamond edge
- Need to measure the metallization area
  - Optical microscope



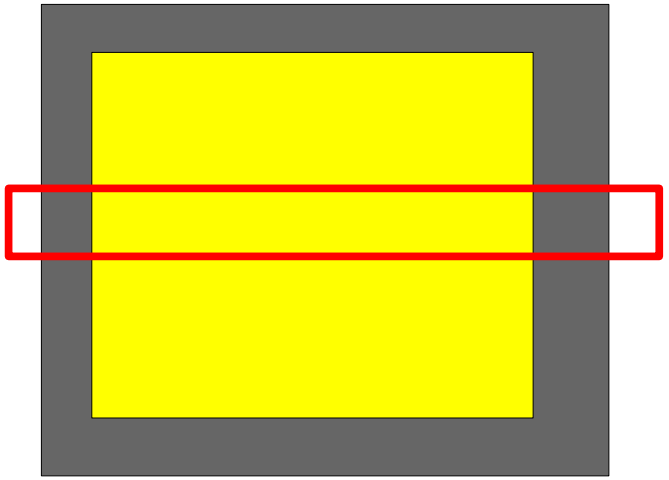
One Pad Diamond – Voltage Scan



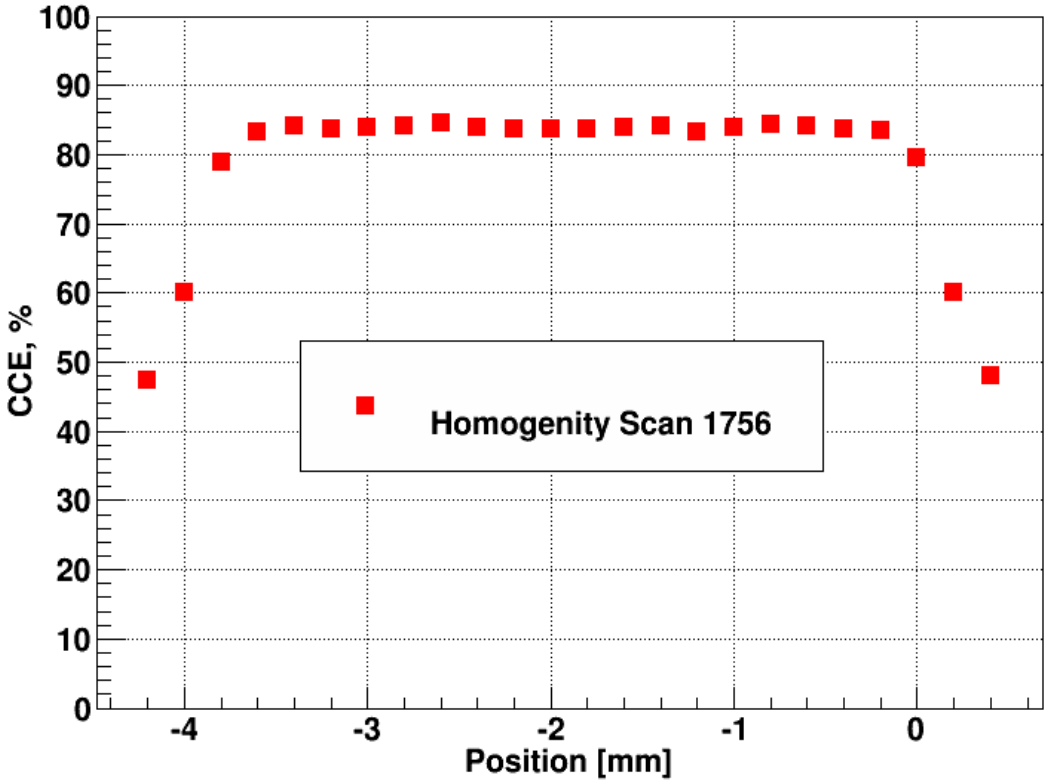
- Good CCE
  - 85%
- S/N at 35



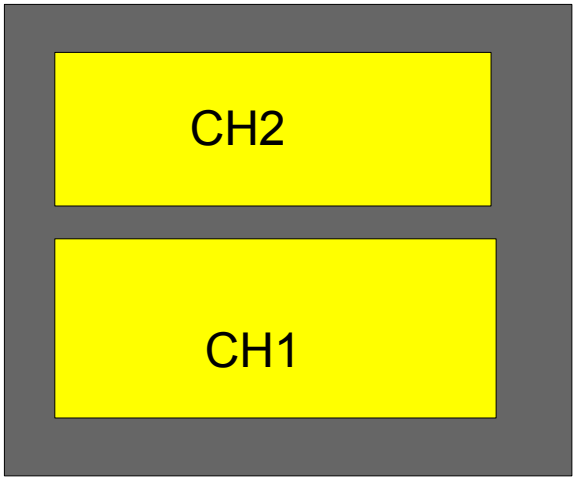
One Pad Diamond - Homogenity



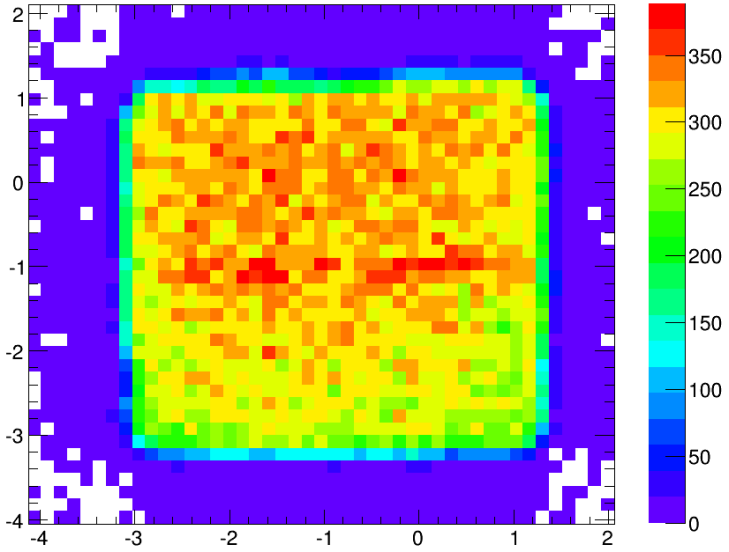
- Amplitude spectrum of pixels with 500um x 200um
-

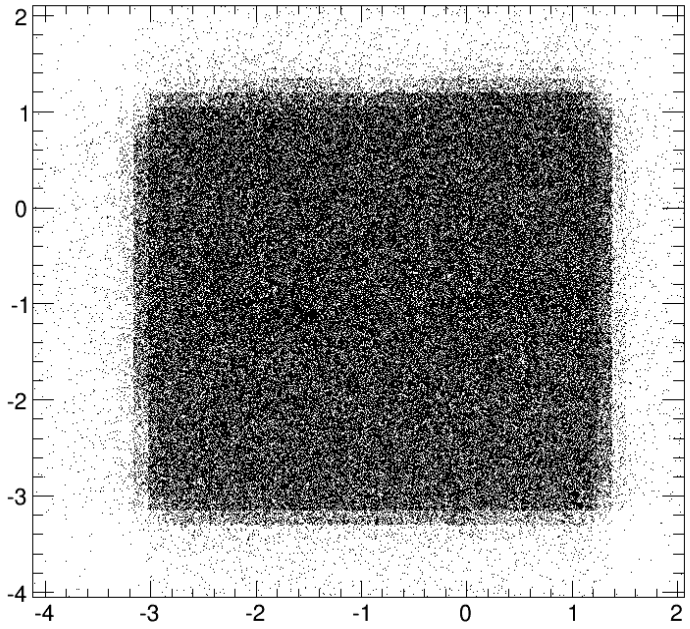


Two Pad Diamond- Geometry

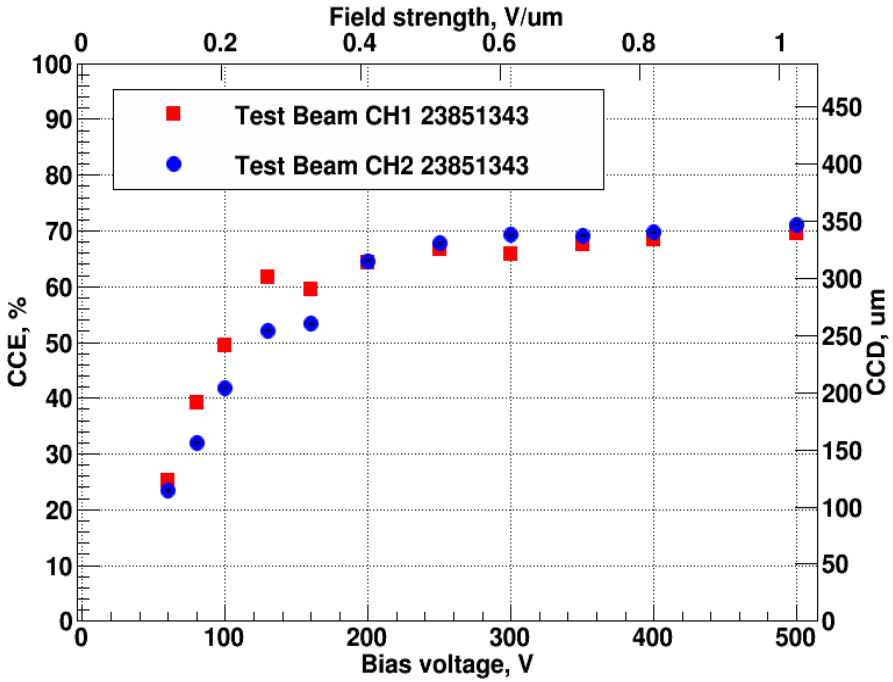


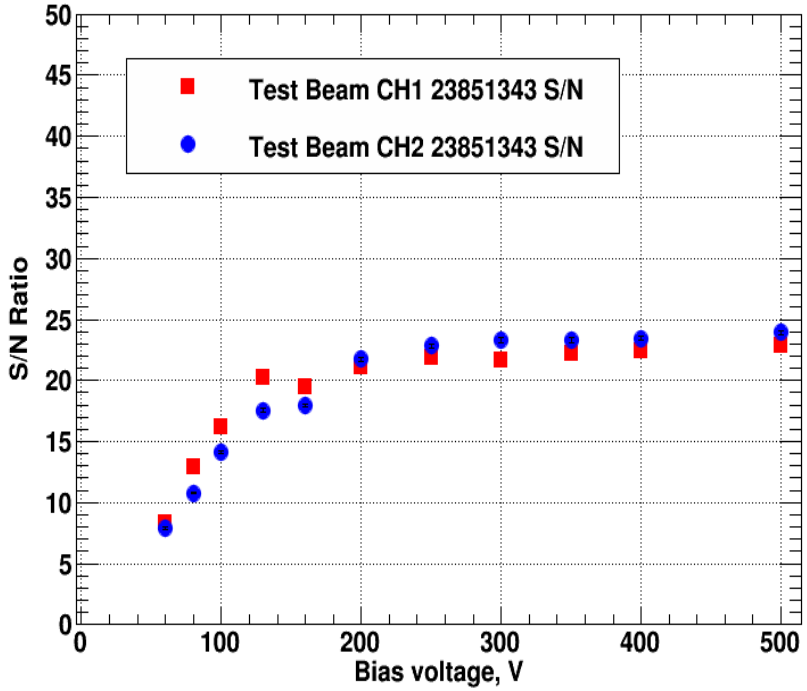
- Geometry does not show a clear gap
  - Gap is only 5um
- Gap visible at color scheme due to higher rates



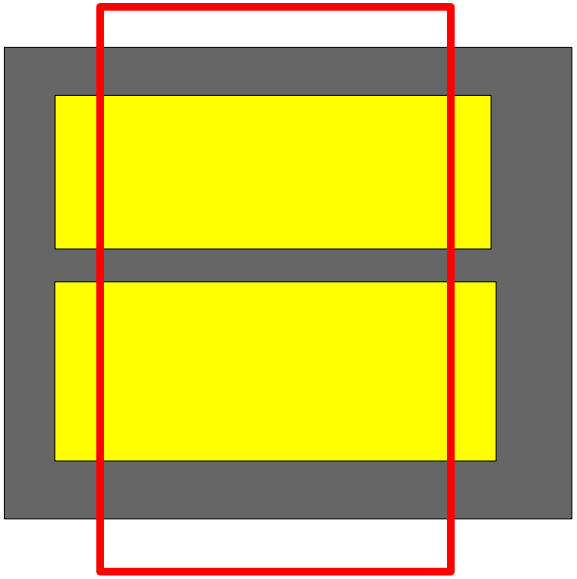


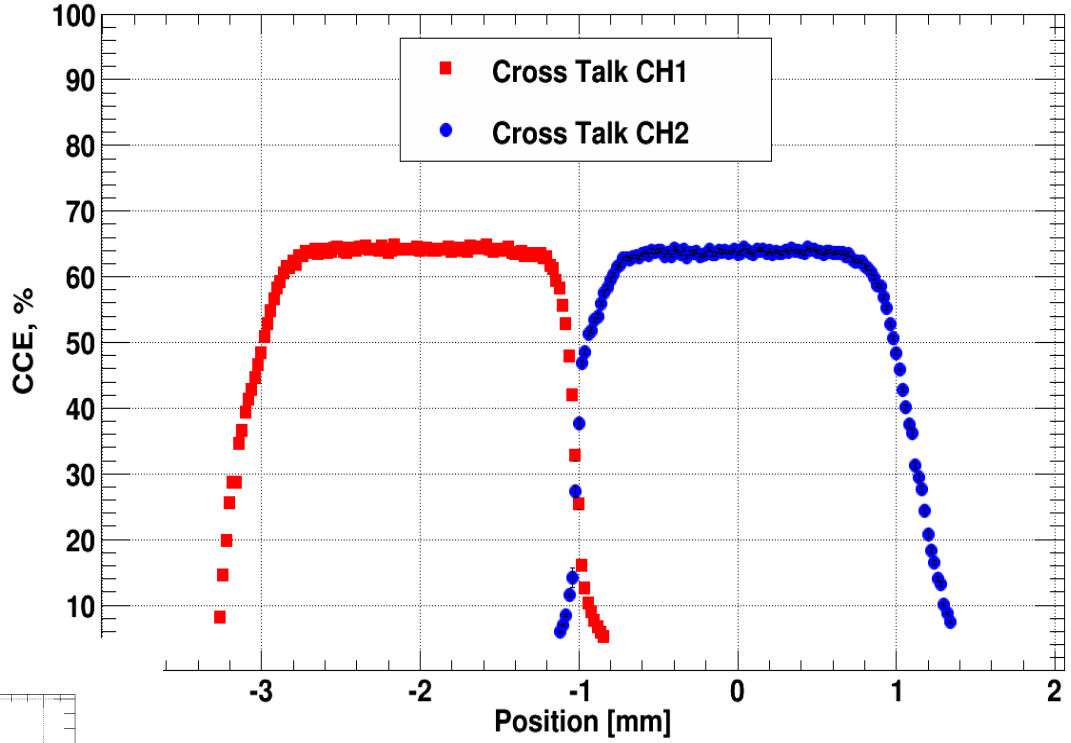
Two Pad Diamond – Voltage Scan

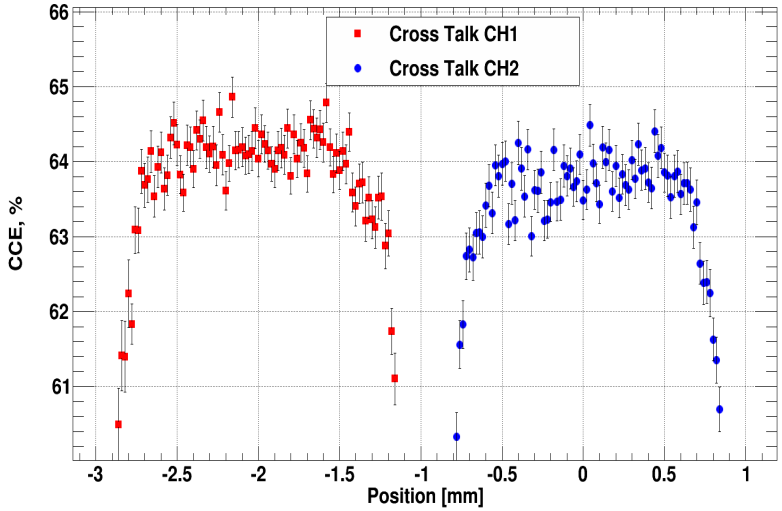




Two Pad Diamond – Cross Talk







- Amplitude Spectrum of strips with 20um x 3.2mm
- First check shows not an homogeneous CCE

Next Tasks

- Measure the one pad diamond with optical microscope
- Check metallization area with homogenity plot
- Check homogenity of two pad diamond
- Check the metallzation with homogenity plot