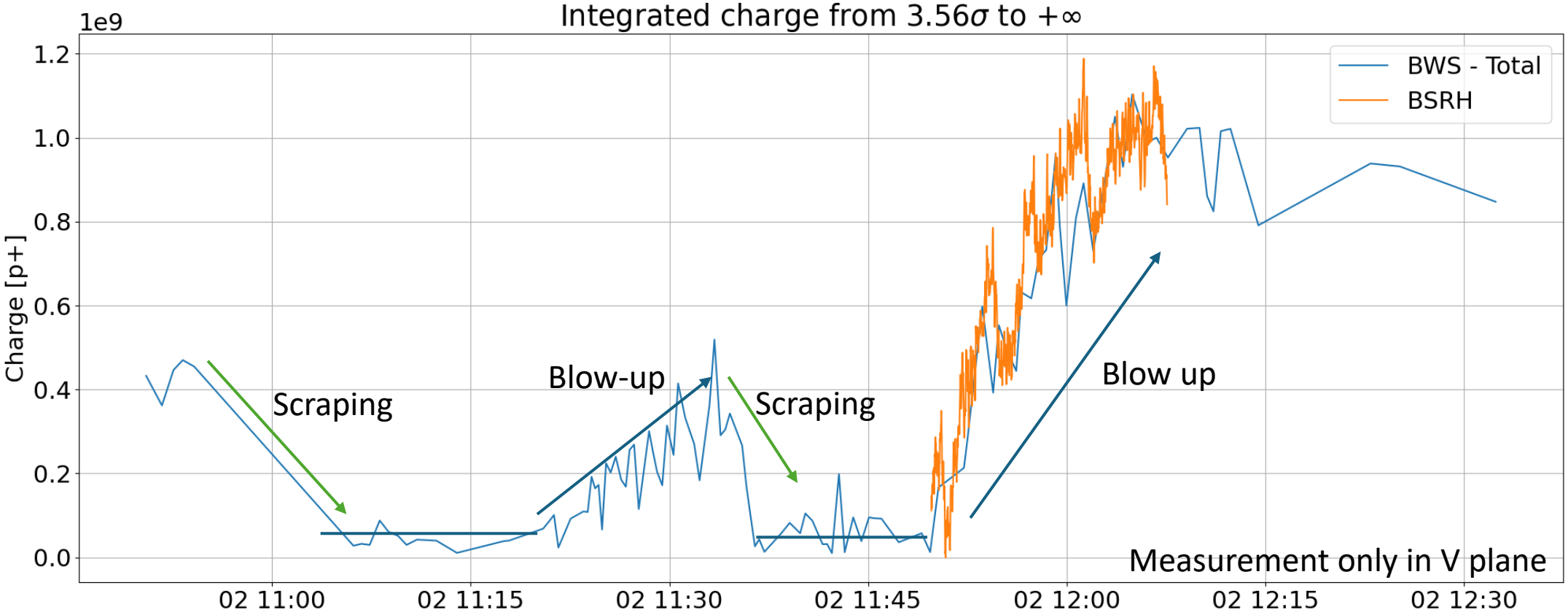
MD13144 – Coronagraph resolution study

Presented by Jan Pucek on behalf of BI/PM

Previous CG results – MD10303

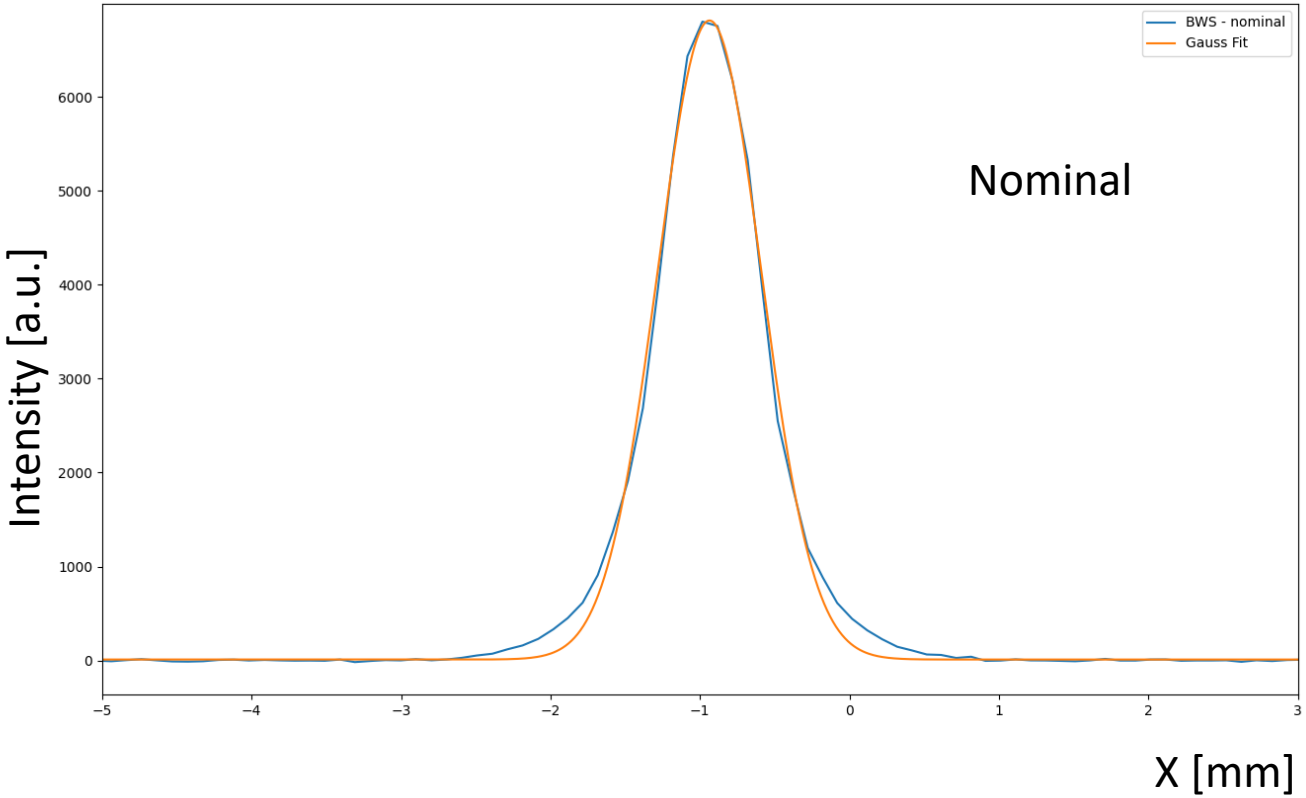


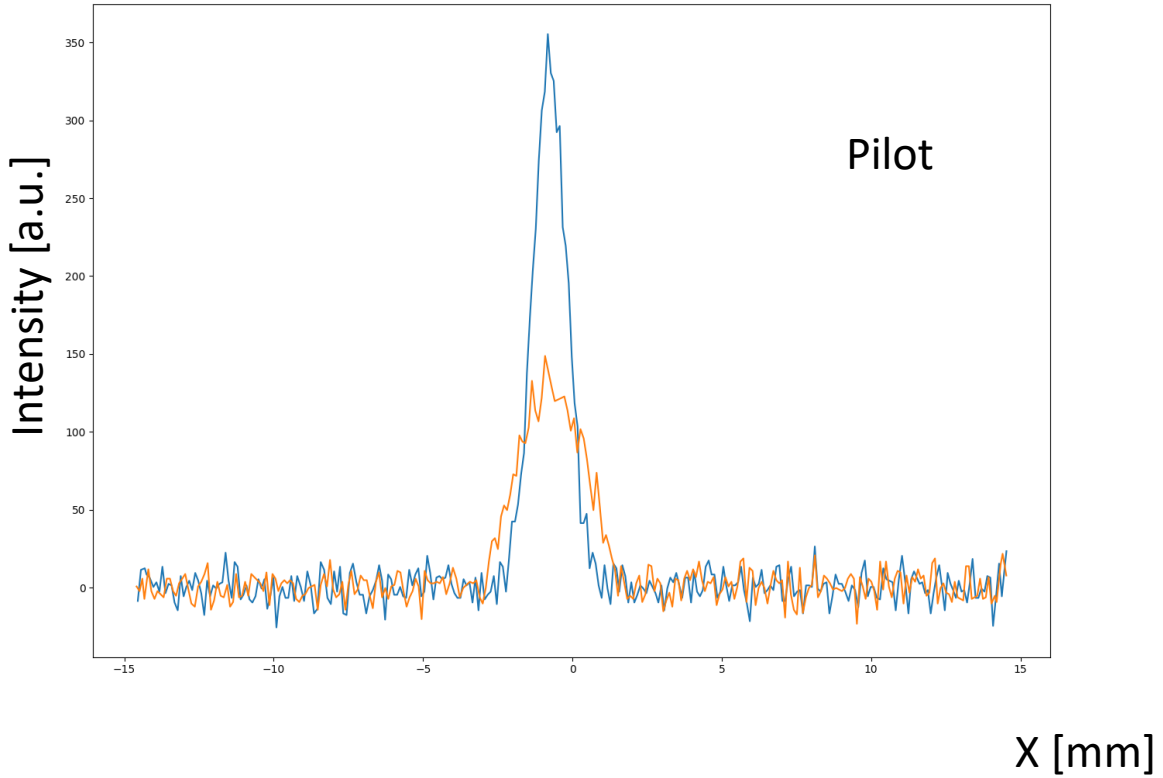
Found a procedure to analyse BWS and BSRH, need to understand under which conditions the BSRH follows the BWS

Requesting another MD to: a) increase the charge resolution of the BWS
b) find limits of the BSRH

a) Increase the charge resolution of the BWS

- Previous MD fill: Nominal, 5x Pilot, Nominal, 5x Pilot
  - To obtain non-saturated bunch profiles – gain adjusted to Nominals





➔**Use only PILOTs and adjust BWS gain**

b) Find limits of the BSRH

- Functional specifications for Beam Halo Monitor almost complete
- Provide benchmarking measurement
- Measure charge in the region 4.7 to 6.7σ

- MD plan:
  - Inject 30* probes (ideally some with different ε),
  - Use the HL ramp
  - Measure the PSF on BSRH
  - Scrape the beam to 3 sigma, blow up individual pilots and measure difference on the BSRH (while using the BWS as reference)
  - At the end of the measurement use newly developed optics (from Riccardo de Maria) and provide the same measurement as before

*Maximum requirement, minimum is 10 pilots

C) Use occulted BSRT on B1

- Coronagraph is overly complex
- Use BSRT with occulters (simplified BSRH)
- Perform same measurement as with BSRH