The University Of Sheffield.

MERIT beam spot size

Beam optics calculations vs. beam monitors
- status & plans -

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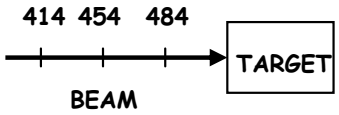
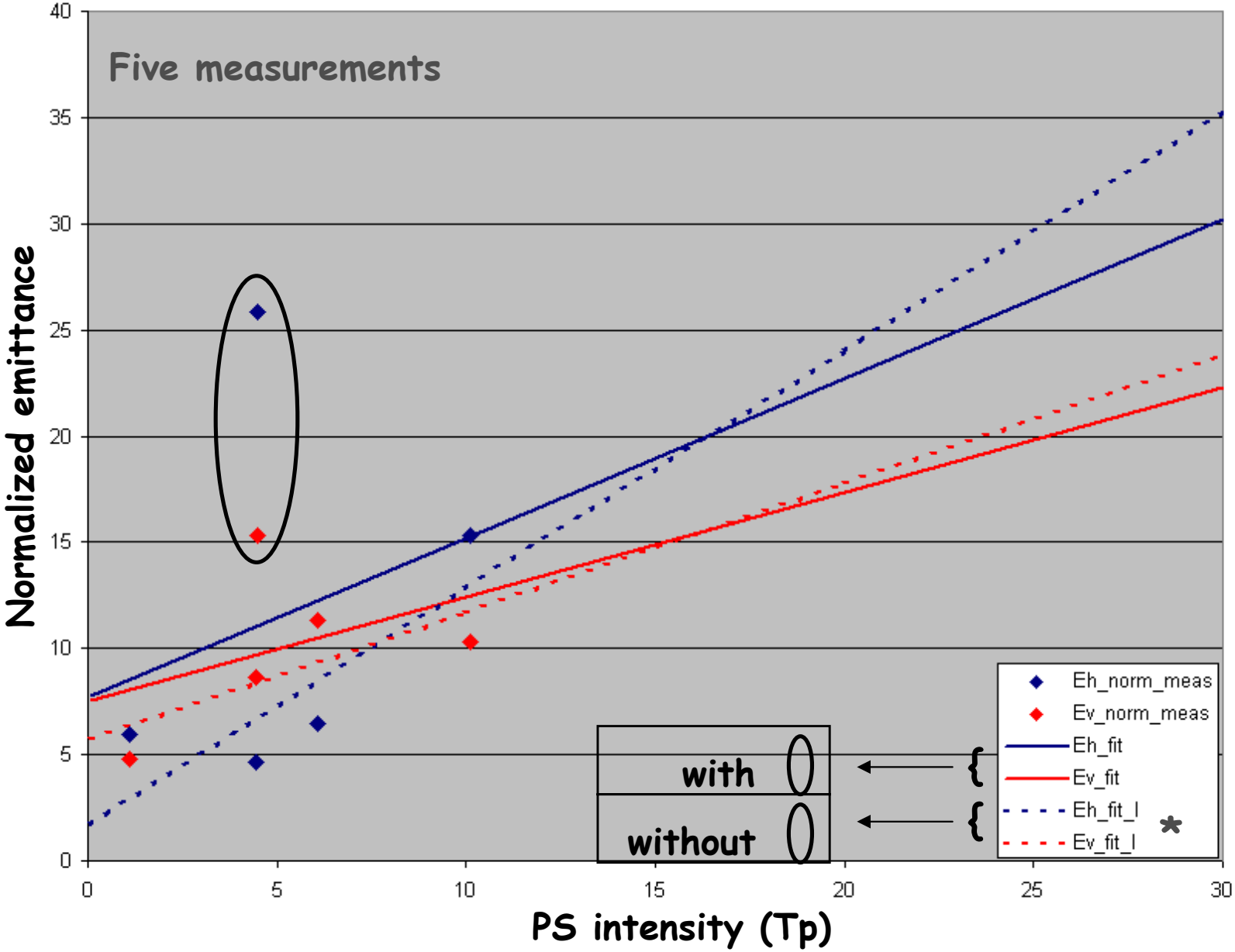
Emittance measurements*





This result (dashed lines)

+

beam optics calculations (slide 13 in (*))

+

textbooks formulas for sigma=f(emittance)

↓

estimate of the beam spot size at the Camera 484 position

+

comparison with the beam monitors results

*https://edms.cern.ch/document/939325/1

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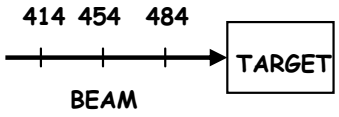
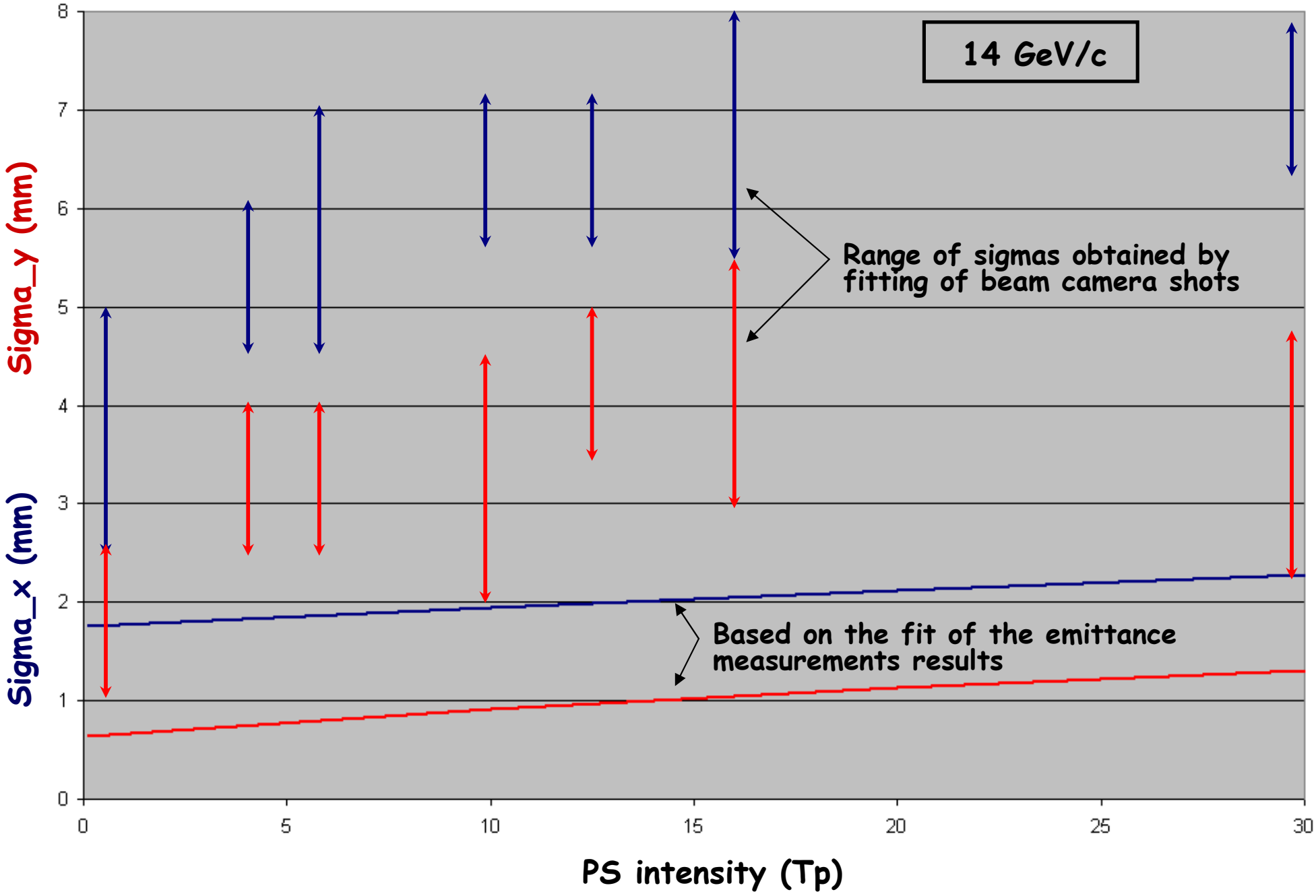
Beam size vs beam intensity

- at Camera 484 position -





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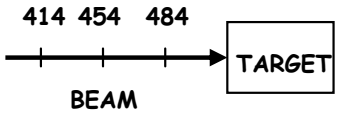
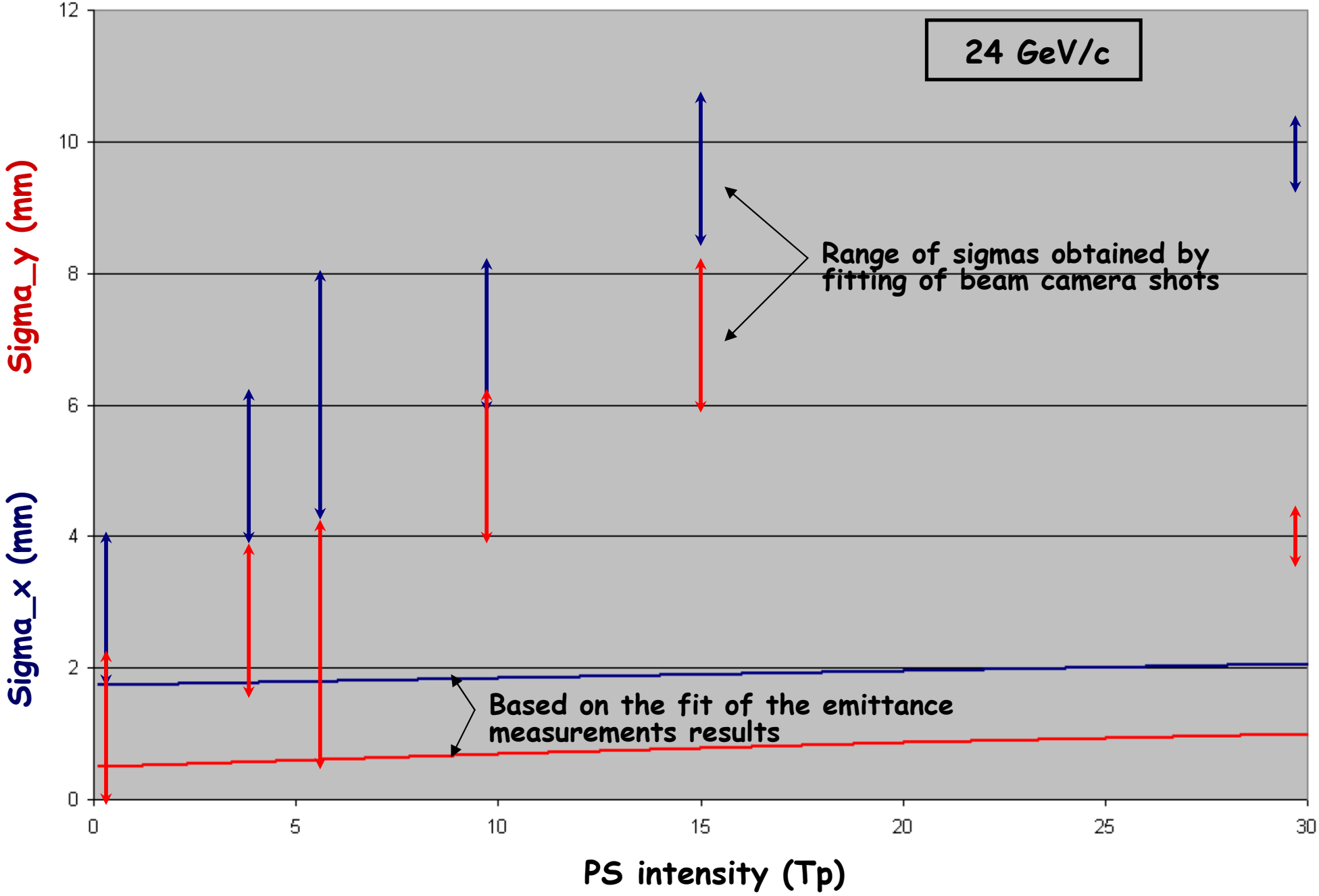
Beam size vs beam intensity

- at Camera 484 position -





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Next steps

- Emittance measurements, beam optics calculations:
  - End of story!
  - What about the errors (measurements, calculations)?
  - My estimate of sigmas at 484 position (check with Ilias)!
- Beam monitors:
  - Re-fit manually the suspicious results**; add χ^2 value as a measure of the CL
  - 'Beam position on target' results*** -> use Harold's file (horizontal scans, etc…)
  - Do quick Monte Carlo and test (again) projections/shadows approach
  - …
  - Finish this ASAP (2 weeks; 3 weeks maximum)

**http://hepunx.rl.ac.uk/uknf/wp3/shocksims/mermar/beam_spot_size_fit.ppt (Slide 5)

***http://hepunx.rl.ac.uk/uknf/wp3/shocksims/mermar/beam_spot_size_fit.ppt (Slide 15)