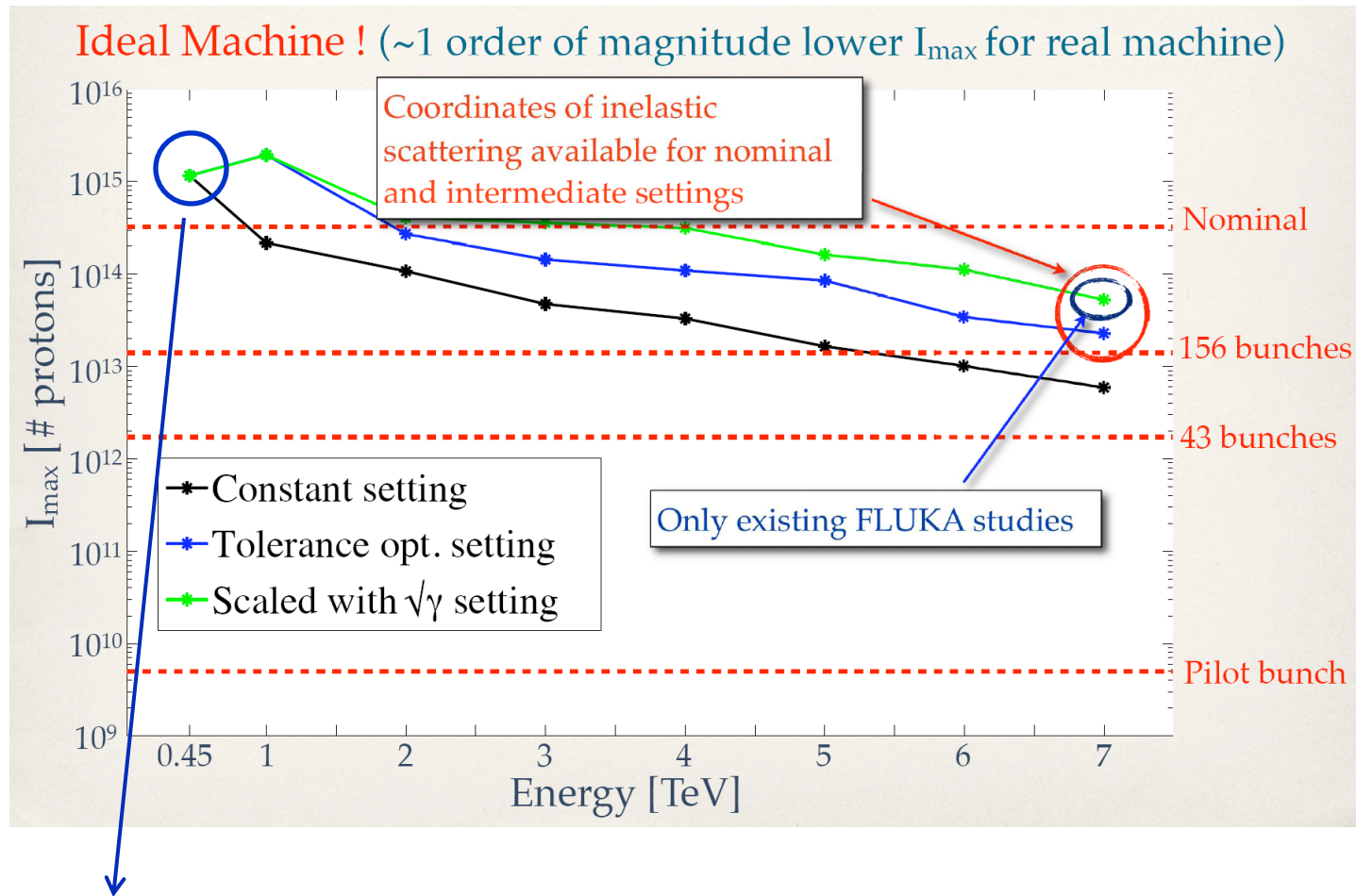# FLUKA studies

Phase II

- scenario: nominal losses for GlidCop TCSMs

  Alessandro provided by Luisella with the TCSM.A6L7.B1 power deposition map
  (for 2 different support designs)   ACTION DONE

- agreed loss maps made kindly available by Chiara, thanks   INPUT AVAILABLE

  i. mixed case (CFC jaws for horizontal TCSM and metal jaws for vertical and skew TCSM)
  ii. tilted jaws
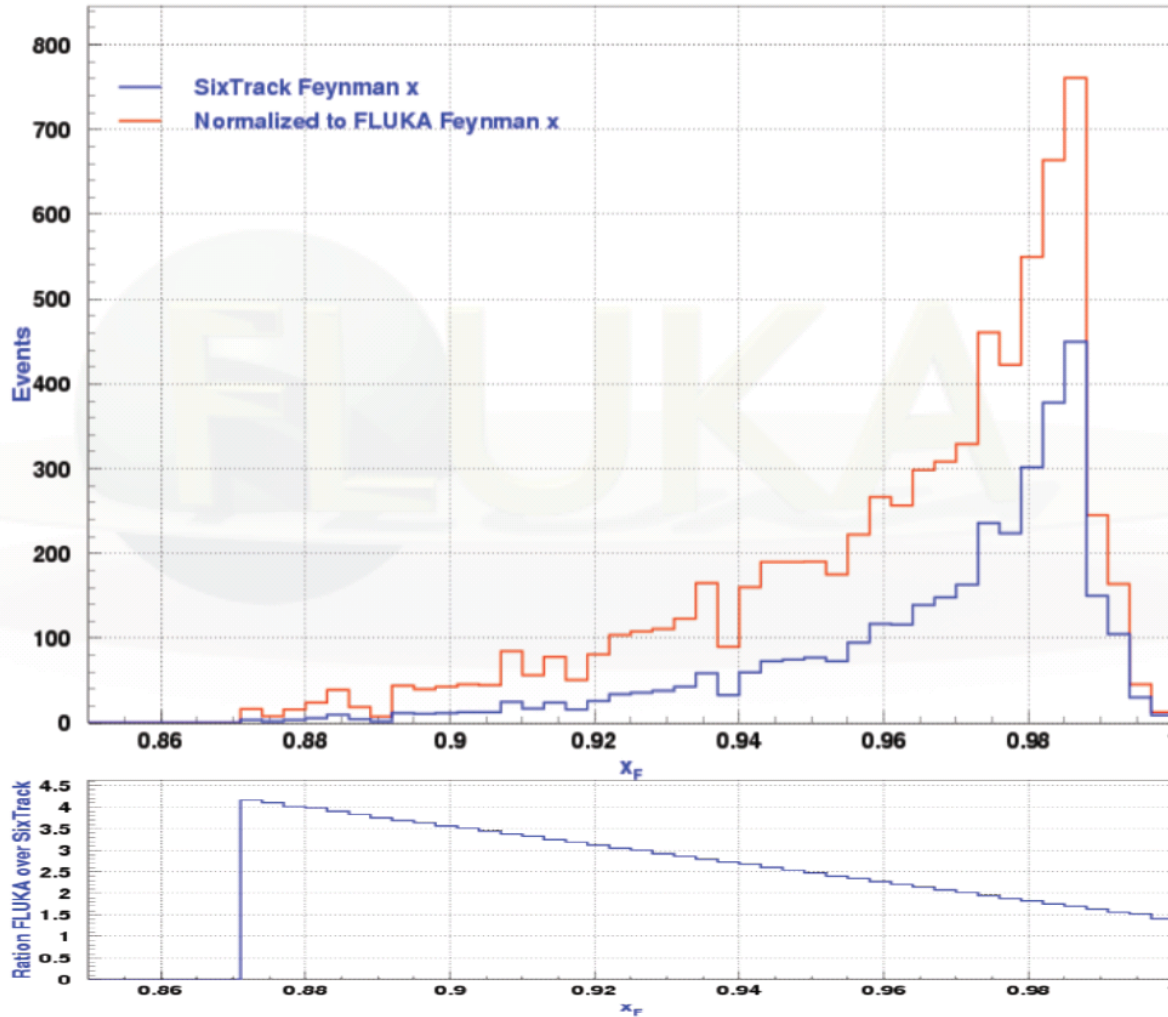
Ideal Machine ! (~1 order of magnitude lower I_{max} for real machine)

Coordinates of inelastic scattering available for nominal and intermediate settings

Nominal

156 bunches

43 bunches

Pilot bunch

Only existing FLUKA studies

- Constant setting
- Tolerance opt. setting
- Scaled with $\sqrt{\gamma}$ setting

I_{max} [# protons]

Energy [TeV]

at injection energy as well: see LHC Project Note 423

(M. Magistris, M. Santana Leitner, R. Assmann, C. Bracco, M. Brugger, F. Cerutti, A. Ferrari, S. Redaelli, V. Vlachoudis)
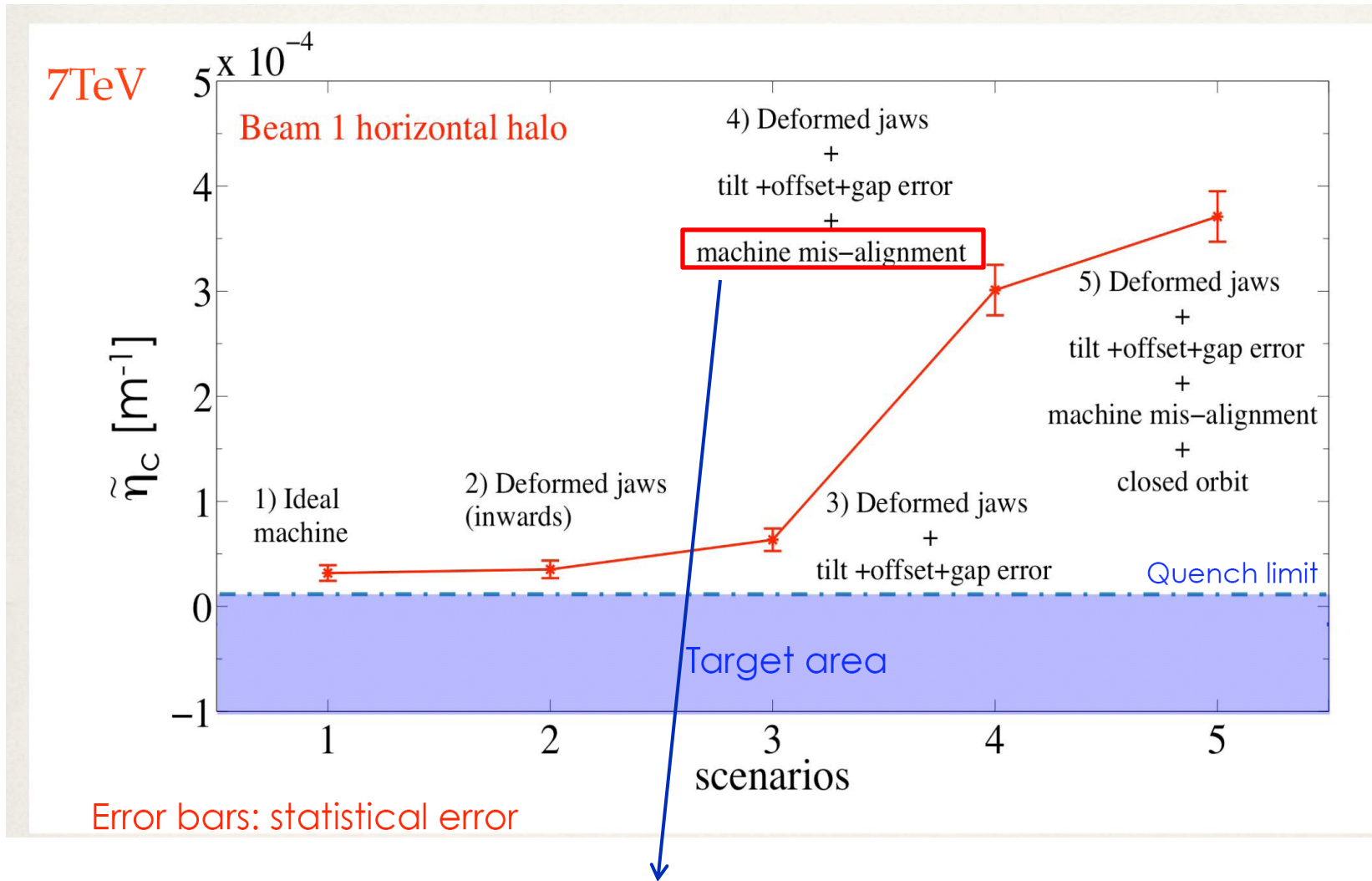
Single diffractive!

+ p_t effect!!

we need to have single diffractive in (flagged) and to be able to identify their further interactions (in principle to skip) other input at present of no use

particle ID in the loss maps?

Imperfections

7TeV — Beam 1 horizontal halo

Plot of $\tilde{\eta}_C$ [m^{-1}] ($\times 10^{-4}$) versus scenarios:

1) Ideal machine
2) Deformed jaws (inwards)
3) Deformed jaws + tilt +offset+gap error
4) Deformed jaws + tilt +offset+gap error + machine mis-alignment
5) Deformed jaws + tilt +offset+gap error + machine mis-alignment + closed orbit

Quench limit

Target area

Error bars: statistical error

what about a scenario with machine mis-alignment and no jaw deformation?