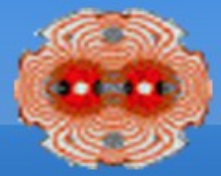
Emittance growth with external noise

MD request by ADT and BB teams



- Emittance growth is a key component to understand lumi evolution
- Understanding the effect of external noise with and without ADT is crutial to
  - Optimize the lumi lifetime
  - Define tolerances on noise level for new equipments (such as crab cavities)
- Maximum achievable HO tune shift depends on external noise
- Scaling with beam-beam parameters to be understood

MD plan

- Filling scheme:
  - 1b non-colliding
  - 3b with different intensities (1,1.5,2E11, similar emittances) colliding in IP2
  - 1b colliding in IP1 and 5
  - 4b colliding together in IP1,2 and 5
- ADT off, increase noise level in steps while monitoring emittances, lumi and losses (at least 10-15 min per step)
- Decrease noise to 0, then put it back to fixed value, based on results obtained previously
- Increase ADT gain in steps