

# Beam-beam studies

activities and news ..

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## Main activities

### ■ Contribute to LHC Commissioning

- Documented at workshops in Evian and Chamonix
- Presentations to LBOC, LSWG and LMC

### ■ Beam-beam studies (experiments) on LHC

- Recent MD Notes released
- Recent presentation by Tatiana

# LHC commissioning

- Propose beam parameters relevant for LHC performance
  - Crossing angle, separation, (including experimental magnets) during full operational cycle
  - $\beta^*$
  - Minimize detrimental effects
  - Filling schemes
  - Luminosity levelling
  - ...
- Study (possibly) beam-beam related problems (mainly in 2010)

# LHC beam-beam studies

- Propose and conduct beam-beam experiments
  - Head-on and long range beam-beam limitations
  - Coherent beam-beam effects
  - Luminosity levelling
  - ...
- Analyse and interpret results
- Propose improvements

## News on beam-beam studies

- Levelling (IP8) feasibility proven, now operational
- Study of possible head-on "limits" in progress, next MD with higher intensity
- First sign of coherent beam-beam modes observed, needs verification
- Proposed study of long range effects in next MD period. Purpose: define strategy for luminosity increase.

## News on beam-beam studies

■ Other studies foreseen (not next MD period):

- Levelling in IP1 and IP5, full long range
- Operation close to half integer tune
- Effect of transverse noise with beam-beam
- ...

## News on beam-beam studies

### ■ Other activities/news:

- Contribute to HL-LHC brainstorming (next week)
- Contribute to definition for strategy 2012
- Foreseen: seminar on LHC beam-beam effects (myths and facts)
- ...