

ICFA Mini-Workshop on Beam-Beam Effects in Circular Colliders



Monday, 5 February 2018 - Wednesday, 7 February 2018

Scientific Programme

(partial list)

1) Beam-Beam Operational Experience:

Beam-beam effects in RHIC

Beam-beam issues in the luminosity performance at BEPCII

Luminosity leveling and beam-beam effects in the LHC

Beam-beam orbit effects in the LHC

Beam-beam effects in KEKB/SuperKEKB

IR magnets for SuperKEKB

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2) Coherent Beam-Beam/Strong-Strong:

Numerical and experimental studies of coherent beam-beam modes: stability and decoherence

Coherent beam-beam instability in collision with a large crossing angle

Landau damping of head-tail modes in the presence of beam-beam interactions

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3) Incoherent Beam-Beam/Weak Strong:

LHC weak-strong beam-beam simulations and experiments

Dynamic aperture simulations of colliding beams and operational scenarios of HL-LHC

Luminosity modelling and beam lifetimes in the LHC

Working point optimisation for colliding beams in HL-LHC

Predicting losses from dynamic aperture simulations: LHC measurements versus simulations

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4) Theory and Simulation:

Beam-beam modelling revision in SIXTRACK

Numerical noise in strong-strong beam-beam simulation

Long-term simulations of beam-beam dynamics with GHOST

Renormalization group theory application to beam-beam study

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5) Future Colliders:

FCC hadron colliders beam-beam effects

Beam-Beam beta-beating effects and implication for the HL-LHC and FCC

Landau damping using electron lens for FCC

beam-beam simulations for the LHeC project

Beam-beam effects in CEPC

Beam-beam effects in JLEIC

Strong-strong simulation of e-p beam-beam interaction eRHIC

Beam-beam interaction with crossing angles

Beam-beam effects with multiple interactions points in eRHIC

Effects of electron bunch replacement in eRHIC

Proton beam emittance growth due to strongly disrupted electron beam in eRHIC

Beam-beam effects in plasma acceleration based linear collider

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6) Beam-Beam Compensation

The RHIC electron lenses - technology and e-beam measurements

Head-on beam-beam compensation in RHIC

Long-range compensation simulations with wires for the LHC and HL-LHC

Long-range compensation experiment in the LHC

E-lens test stand at CERN

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