



ACCELERATOR SEMINAR

Werner Herr

CERN

Wednesday, 15th August at 4 pm

KBW lecture hall

Planckstraße 1, 64291 Darmstadt

“Beam-Beam interaction: Recent developments, measurements (and simulation techniques)”

In high energy particle colliders the beam-beam interaction is the dominant source of non-linearities. In all previous and existing colliders it is the limitation to the performance, beam stability and life time. The two latter are of highest relevance in the case of circular colliders where a high performance must be maintained over a running time of typically 20 hours or more. In particular in the absence of damping, i.e. ions colliders this is often hard to guarantee. In the LHC the beam-beam interaction is not only very strong but results in many different effects not encountered in previous colliders and required studies in uncharted territories. Although necessarily incomplete, a summary of the most important effects and the consequences are given and some of the novel tools that have been developed are presented.



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