Transverse Emittance through the Cycle – Update

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Abstract

During LHC Run 1 about 30 % of the potential peak performance was lost due to transverse emittance blow-up through the LHC cycle. Measurements indicated that the majority of the blow-up occurred during the injection plateau and the energy ramp probably due to Intra Beam Scattering (IBS). IBS Simulation results will be shown and compared to measurements also considering emittance growth during collisions. Requirements for commissioning the LHC with beam in 2015 after Long Shutdown 1 to understand and control emittance blow-up will be listed. A first estimate of emittance measurement accuracy for LHC Run 2 will also be given.