

LHCb Physics Overview

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Owing to the large beauty production cross-section at the LHC and to the unique characteristics of the LHCb detector and trigger, unprecedented samples of beauty decays are becoming available. The angle γ of the CKM unitarity triangle remains the least precisely measured parameter of the CKM mixing matrix. The precision measurement of this parameter is one of the main goals of the LHCb experiment. The latest LHCb measurement of γ combining all the individual inputs will be presented. Rare $b \rightarrow s\mu^+\mu^-$ transitions that proceed via flavour changing neutral currents are suppressed in the SM and provide a sensitive probe of new physics contributions entering in competing diagrams. Particularly interesting are the angular and isospin asymmetries in the decay $B \rightarrow K^{(*)0}\mu^+\mu^-$, which are sensitive probes of new physics. Updated measurements of CP violation and rare decays of beauty mesons will be presented.

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