



LHC Seminar

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TITLE: **CP violation in charmless two-body B decays at LHCb**

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PLACE: Council Chamber

ABSTRACT

The study of CP violation in charmless charged two-body decays of neutral B mesons provides a test of the Cabibbo-Kobayashi-Maskawa picture of the Standard Model, and is a sensitive probe to contributions of processes beyond it.

Using a data sample of proton-proton collisions, corresponding to an integrated luminosity of 1.0 fb^{-1} , collected with the LHCb detector at a centre-of-mass energy of 7 TeV, CP violation has been observed for the first time in the B^0_s to $K\pi^+$ decay with a significance of more than 5 sigma.

Furthermore, first measurements of direct and mixing-induced CP-violating asymmetries in the B^0_s to K^+K^- decay have been performed, opening new avenues to the determination of the unitarity triangle angle γ using decays affected by penguin processes.