

Measurement of the bottom-strange meson oscillations at LHCb

Marcos Romero Lamas

A measurement of the mixing-induced CP violation phase in the bottom-strange meson system and its oscillation parameters through the dimuon (after a charmonium decay) and dikaon decay mode is reported. The weak phase difference is precisely constrained within the Standard Model, constituting a key probe for new physics phenomena. This preliminary analysis uses 6/fb of 13 TeV proton-proton collisions at LHCb and constitutes the world's most precise measurement of the CP violation phase, the decay width, and the decay-width splitting of the bottom-strange meson. In a flavor-tagged time-dependent angular fit to about half a million signal candidates of background subtracted data, a statistical uncertainty of 22 mrad in the CP violating phase is achieved.

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