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Mixing and CP violation in charm decays at LHCb

The LHCb experiment published the first observation of CP violation in the decay of charmed particles in 2019, using the decay channels $D^0 \rightarrow \pi^+\pi^-$ and $D^0 \rightarrow K^+K^-$. Additional measurements of D^0 mixing and of other decay channels are essential to understand whether this observation can be explained within the Standard Model, or if new sources of CP violation are needed. We present the latest measurements of mixing and CP violation in complementary decay channels, and discuss the prospects for sensitivity at the LHCb upgrades.

Secondary track

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