

Mixing and CP-violation studies in charm decays at LHCb

vendredi 22 juillet 2011 10:00 (15 minutes)

LHCb has collected a large sample of open charm events in the 2010 run. Indirect CP violation in charm is an excellent probe for new physics due to the smallness of the standard model predictions. Preliminary measurements of mixing parameters and searches for CP violation in the time-dependence of two-body charm decays are presented. The prospects of improving the sensitivity of these measurements in the 2011-12 run are discussed.

Preliminary results of searches for time-integrated CP violation in two, three and four-body charm decays at LHCb are presented, using 37 pb⁻¹ of data collected in 2010. We construct observables that are sensitive to direct CP violation, which is predicted to be small in the Standard Model, but insensitive to production and detector asymmetries. These searches are complementary to the time-dependent searches presented elsewhere. We conclude by discussing prospects for the 2011-12 run.

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Classification de Session: Flavour Physics and Fundamental Symmetries

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