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Type: Ordinary

Charm mixing and CP violation

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LHCb collected the world's largest sample of open charm decays during Run 1 of the Large Hadron Collider. This has permitted many precision measurements of charm mixing and CP violation parameters, the most precise of which being ΔA_{CP} , a measurement of the relative strength of direct, time-integrated CP asymmetries between two singly-Cabibbo suppressed D^0 decays. This measurement has recently been updated using promptly-produced D^0 mesons with the full Run 1 dataset, and has a precision below the permille level. In addition, LHCb has recently made the first observation of D^0 mixing in a multibody D^0 decay, also measuring associated coherence parameters which can be used as input to measurements of the CKM angle γ . LHCb has also measured the mixing parameters x and y with a model-independent analysis of $D^0 \rightarrow K_S^0 \pi^+ \pi^-$ decays, and the size of direct CP violation in $D^0 \rightarrow K_S^0 K_S^0$ decays. These four analyses will be presented, along with a brief overview of the prospects for Run 2.

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Classification de Session: Heavy Flavours

Classification de thématique: Experiment