

Contribution ID: 93

Type: **not specified**

Measuring charm mixing parameters using a model-independent technique in $D^0 \rightarrow K_S^0 \pi^+ \pi^-$

Tuesday, 9 April 2013 09:33 (12 minutes)

A model-independent technique can be used to determine the mixing and CP violation parameters in the charm sector using $D^0 \rightarrow K_S^0 \pi^+ \pi^-$ decays. The Dalitz plot is binned so that no description of the amplitude variation over the phase space is necessary. The analysis is sensitive to the relative sign of the mixing parameters and with additional data will achieve good sensitivity to CP violation parameters. The status of the analysis, based on the 1.0 fb^{-1} of data collected by LHCb in 2011, is presented.

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Session Classification: Track 2

Track Classification: Parallel Track 2