



Contribution ID: 48

Type: **not specified**

Measurement of CP violation parameters in $B^0 \rightarrow DK^{*0}$ decays

Wednesday 10 April 2019 11:00 (15 minutes)

The CP-violating angle γ is the only angle of the unitarity triangle which can be measured via tree-level processes. γ can also be measured indirectly using loop-level processes, which are susceptible to the effects of new physics. An observed discrepancy between the direct and indirect measurements of γ would be evidence for new physics. Reducing the experimental uncertainty on the direct γ measurement is therefore of great interest.

To measure γ , we exploit interference between decays with $b \rightarrow u$ and $b \rightarrow c$ quark transitions. One such decay is $B^0 \rightarrow DK^{*0}$, where D is a superposition of D^0 and anti- D^0 mesons. An analysis of this mode is presented with D reconstructed in the two-body final states $K\pi^+$, $K\pi^-$, KK^- and $\pi^+\pi^-$, and the four-body final states $K\pi^+\pi^-\pi^+$, $K\pi^-\pi^+\pi^-$ and $\pi^+\pi^-\pi^+\pi^-$. The data sample used corresponds to 5 fb⁻¹ of proton-proton collisions collected by the LHCb experiment. Several observables are measured, including CP asymmetries. These provide constraints on γ as well the amplitude ratio r_B and strong phase difference δ_B between the interfering decays.

Presenter: PULLEN, Hannah (University of Oxford (GB))

Session Classification: Parallel stream 1