



Contribution ID: 325

Type: Talk

[405] A sensitivity study for the measurement of the photon polarization in $B^+ \rightarrow K^+ \pi^- \pi^+ \gamma$ decays at LHCb

Friday 25 August 2017 12:15 (15 minutes)

Radiative decays of B mesons are flavour-changing neutral current processes used as probes for new physics (NP). They occur predominantly via $b \rightarrow s\gamma$ loop diagrams in which the photon is expected, in the Standard Model, to be mostly right handed. However, a significant left-handed component could arise from NP phenomena. The LHCb collaboration is attempting to measure the photon polarisation parameter λ_γ via several methods. We present here a promising way to access this quantity through a full five-dimensional amplitude analysis of $B^+ \rightarrow K^+ \pi^- \pi^+ \gamma$ decays using data collected with the LHCb detector from 2011 to 2016.

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Session Classification: Nuclear, Particle-and Astrophysics (TASK-FAKT)

Track Classification: Nuclear, Particle- and Astrophysics (TASK - FAKT)