Measurement of the CP asymmetry in $D^0 \to K^- K^+$ decays with the LHCb experiment

- Search for a difference in the behaviour of particles and anti-particles

- The current Standard Model allows only small differences
  - $\rightarrow$ Interesting to search for deviations

- A natural observable to measure: $A_{CP} = \dfrac{N(D^0 \to K^- K^+) - N(\bar{D}^0 \to K^- K^+)}{N(D^0 \to K^- K^+) + N(\bar{D}^0 \to K^- K^+)}$

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