# LHCb UK Annual Meeting

Martin Tat

Oxford LHCb

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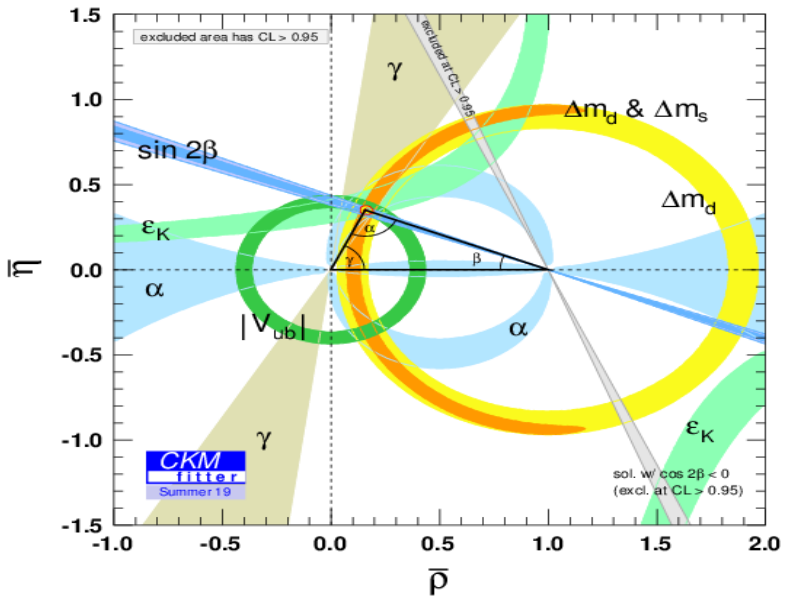
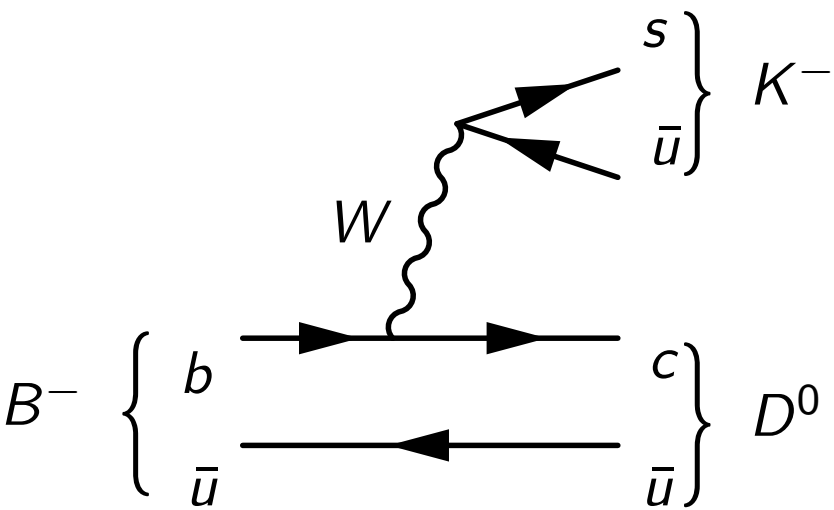


# About myself

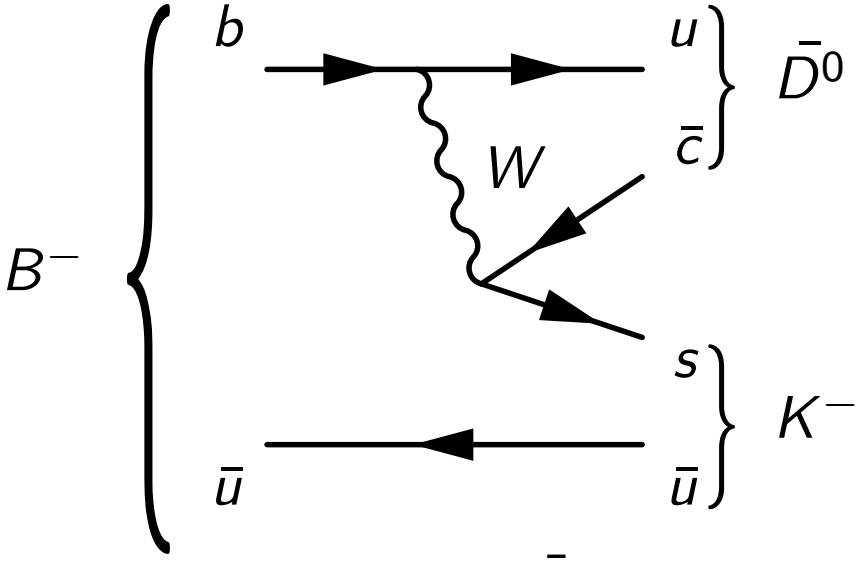
- From Kristiansand, Norway
- 4-year Master of Physics, University of Oxford
- PhD with LHCb at University of Oxford
- Supervisors:
  - Prof Guy Wilkinson (analysis)
  - Prof Neville Harnew (detector)

# Analysis project: $\gamma$ measurement

- $B^{\pm} \to DK^{\pm}, \quad D = D^0, \bar{D}^0$
  - $D \to K^+K^-\pi^+\pi^-$
- Interference between $b \to c$ and $b \to u \implies \gamma$ measurement!
- 4-body decay $\implies$ 5-dimensional phase space
- Strong phase inputs from BESIII




**(a)** $B^- \to D^0K^-$




**(b)** $B^- \to \bar{D}^0K^-$

# Analysis project: $\gamma$ measurement

- Unbinned model-dependent fit
  - LHCb isobar amplitude model arXiv:1811.08304
  - Generate events and fit to the same model
  - $\gamma$ precision: $11^\circ$ with 2000 events
- Binned model-independent fit
  - Develop binning scheme
  - $\gamma$ precision with 8 bins: $13^\circ$, $12^\circ$ with further modifications
  - $\gamma$ precision with 4 bins: $15^\circ$, $14^\circ$ with further modifications
- Next steps:
  - Pick out events from LHCb and BESIII data
  - Extract strong phases from BESIII data and measure $\gamma$ from LHCb data
  - TORCH with Prof Neville Harnew