



Contribution ID: 212

Type: Poster

## 【366】 Measurement of the Branching Fraction $\mathcal{B}(B^+ \rightarrow \bar{D}^0 K^+)$ using $186.75 \text{ fb}^{-1}$ of $\Upsilon(4S)$ data from Belle II

Tuesday 5 September 2023 19:00 (1 minute)

We present a measurement of the Branching Fraction  $\mathcal{B}(B^+ \rightarrow \bar{D}^0 K^+)$  using  $186.75 \text{ fb}^{-1}$  of  $\Upsilon(4S)$  Belle II data gathered from 2019 to 2021. To extract the signal yield, we fit over reconstructed events corresponding to  $B^+ \rightarrow \bar{D}^0 K^+$  with  $\bar{D}^0 \rightarrow K^+ \pi^-$  which are distributed over the *beam* to *B* energy deviations at center-of-mass,  $\Delta E$ . The beam energy furthermore constrains the invariant mass of the *B* products.

Our focus lies on the appropriate fitting analysis methods used on a Monte Carlo simulated event dataset and how its analysis can serve to obtain a reliably unbiased measurement of a branching fraction from a real dataset.

### Theoretical Work

**Authors:** SCHWANDA, Christoph (Austrian Academy of Sciences (AT)); BRITO RICAURTE, Cristhian Xavier (Austrian Academy of Sciences (AT)); SCHNEIDER, Nikolaus (Austrian Academy of Sciences (AT))

**Presenter:** SCHNEIDER, Nikolaus (Austrian Academy of Sciences (AT))

**Session Classification:** Poster Session

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