γ analysis update in $B^{\pm} \to (K^+K^-\pi^+\pi^-)_D K^{\pm}$ decays

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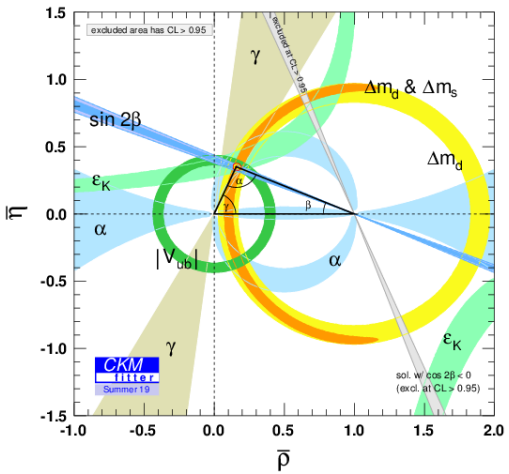

Outline

Summary of last time

- $B^{\pm} \to DK^{\pm}$, $D \to K^+K^-\pi^+\pi^-$, arXiv:hep-ph/0611272
- Model independent measurement, external strong phase input from BESIII
- Estimate 2000 B events from LHCb Run 1 and 2
  - Benchmark: $\sigma(\gamma) = 11^\circ$ from model dependent fit
  - LHCb amplitude model in AmpGen, arXiv:1811.08304
- Pull study to test and optimize binning scheme
  - Simulated 1000 experiments with 2000 event each
  - Strong phases from amplitude model using MC integration

Binning scheme

- Previously: Parameterized 5D phase space and defined binning scheme in terms of 5 coordinates

- Better and simpler:
  - Generate C++ source code for amplitude model using AmpGen
  - Evaluate amplitude directly in analysis
  - Decide bin based on strong phase directly

$$\frac{\mathcal{A}(D^0)}{\mathcal{A}(\bar{D}^0)} = r_D \exp(i\delta_D)$$