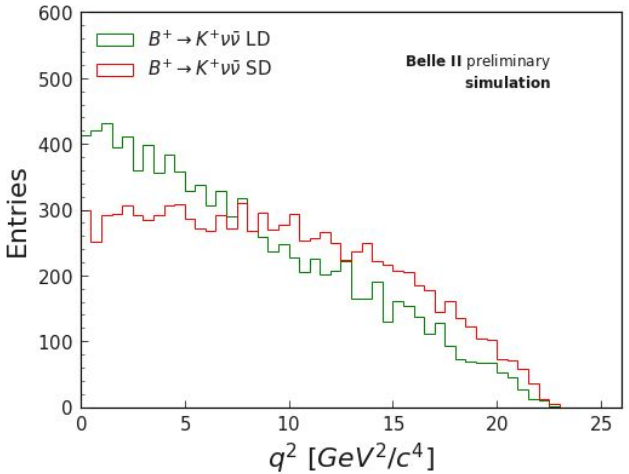
Panel discussion

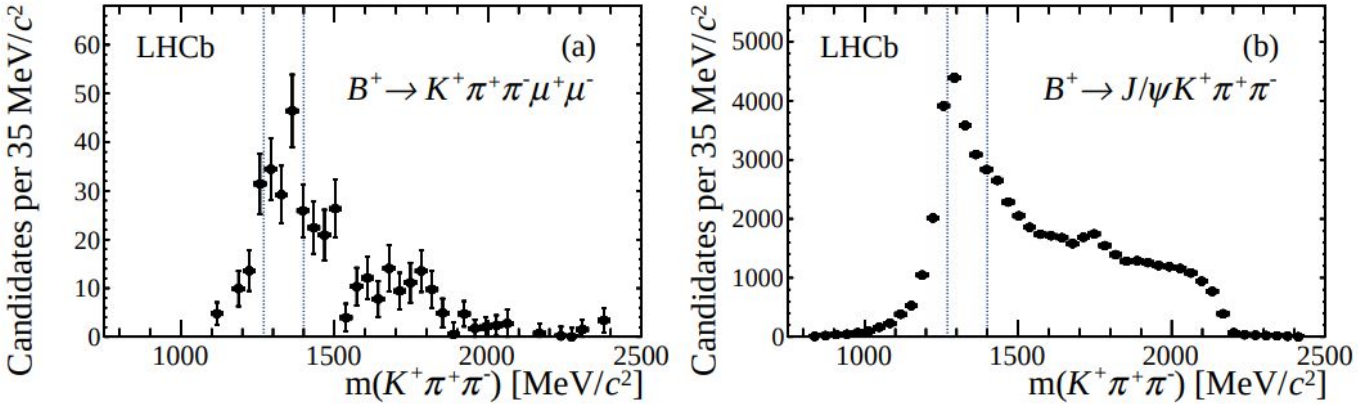
b → d and c → u

- What do we learn from c → u compared to much better constrained s → d?
- Tau background in D+ →pi+ nunubar?
- Can Belle II compete with BESIII in c →u nunubar?
- Neutral modes, B^0 → pi^0 nunubar and B^0 → rho^0 nunubar are the most promising for b →d (to avoid tau background). Rho0 → pi+ pi- is the cleanest experimentally. When do we expect form factors for B → rho ? Can we for now use B → K* for now?

Tau background has similar q2 distribution to the signal



B →rho/K(*) nunu background from B →Xs/d nunubar

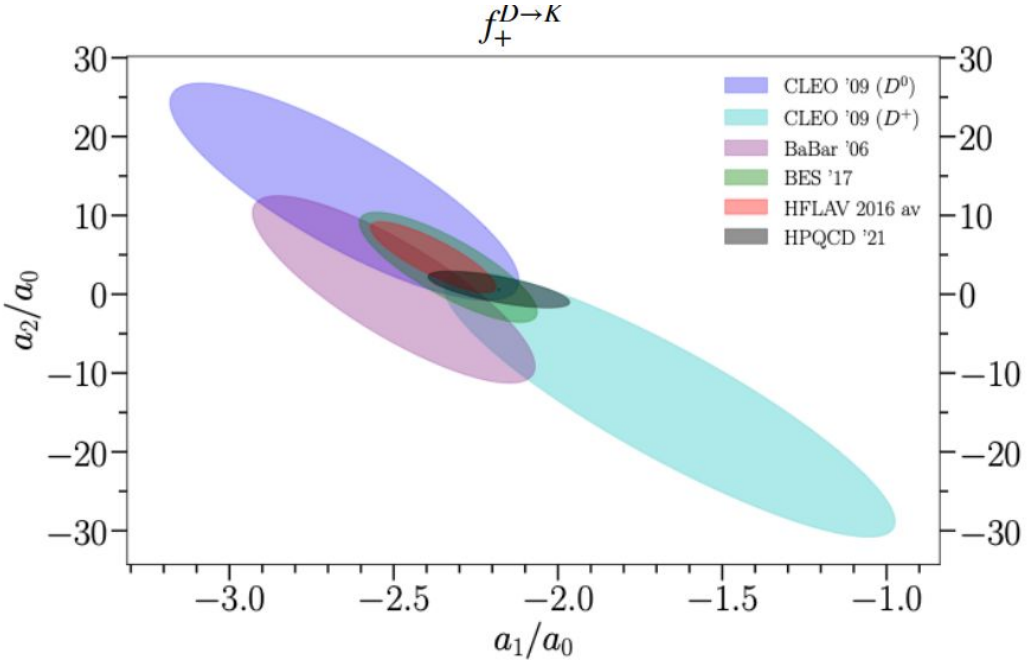


arXiv:1408.1137

Figure 4: Background-subtracted $m(K^+\pi^+\pi^-)$ distributions for (a) the signal decay $B^+ \to K^+\pi^+\pi^-\mu^+\mu^-$ and (b) the control channel $B^+ \to J/\psi K^+\pi^+\pi^-$. The vertical lines indicate the masses of the $K_1(1270)^+$ and $K_1(1400)^+$ resonances.

- B →X(d,s) nunubar with M(Xs) > 1 GeV/c^2 with missing particles is a background for B → rho0 (B →K*). Main potential problems are from K1 resonances. Can we estimate it as:
  - Br = Br(Xs) - Br(K) - Br(K*) (with large uncertainty >> theory error)
  - Saturate the rate with incoherent (1-a) K1(1270) + a K1(1400) (with large uncertainty on a) + phase space for nunubar pair.

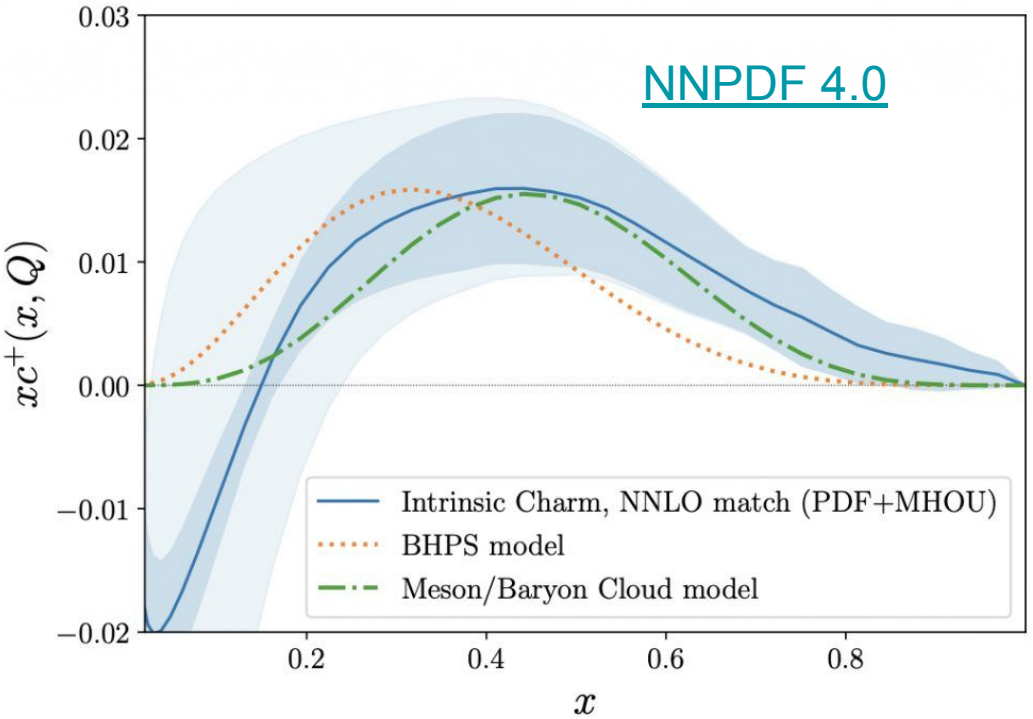
Improving B →K form factors with D →K data (?)



- From the talk of Chris

- Lattice determination of D →K form factor shape agrees with experimental data and has comparable accuracy.
- The lattice determination is statistically correlated with B →K
- Can we use D → K experimental data to reduce uncertainties?
- Can we expect more accurate data from BES / Belle II ?

Estimation of sensitivity at the LHC



- Some recent parton distribution function sets include sizeable (few percent) intrinsic charm contribution →included in the sensitivity estimates
- None of the PDF sets include intrinsic b (can be 10% of intrinsic c). What would this mean for the sensitivity at the LHC?