Supplementary material for LHCb-PAPER-2012-024

A comparison of LHCb's differential branching fraction measurement with earlier measurements from BaBar [1], Belle [2] and CDF [3] is provided in Fig. 1. A comparison of the Belle and CDF values for $A_{\rm FB}$ is provided in Fig. 2. There is good agreement between the differential branching fraction and $A_{\rm FB}$ measurements of the experiments in every q^2 bin. The parameter $F_{\rm H}$ has not been previously measured.

References

[1] BaBar collaboration, B. Aubert *et al.*, *Measurements of branching fractions, rate asymmetries, and angular distributions in the rare decays* $B \to K\ell^+\ell^-$ *and* $B \to K^*\ell^+\ell^-$, Phys. Rev. **D73** (2006) 092001, arXiv:hep-ex/0604007; BaBar collaboration, J. P. Lees *et al.*, *Measurement of branching fractions and rate asymmetries in the rare decays* $B \to K^{(*)}\ell^+\ell^-$, arXiv:1204.3933.

[2] Belle collaboration, J.-T. Wei *et al.*, *Measurement of the differential branching fraction and forward-backword asymmetry for* $B \to K^{(*)}\ell^+\ell^-$, Phys. Rev. Lett. **103** (2009) 171801, arXiv:0904.0770.

[3] CDF collaboration, T. Aaltonen *et al.*, *Measurements of the angular distributions in the decays* $B \to K^{(*)}\mu^+\mu^-$ *at CDF*, Phys. Rev. Lett. **108** (2012) 081807, arXiv:1108.0695.

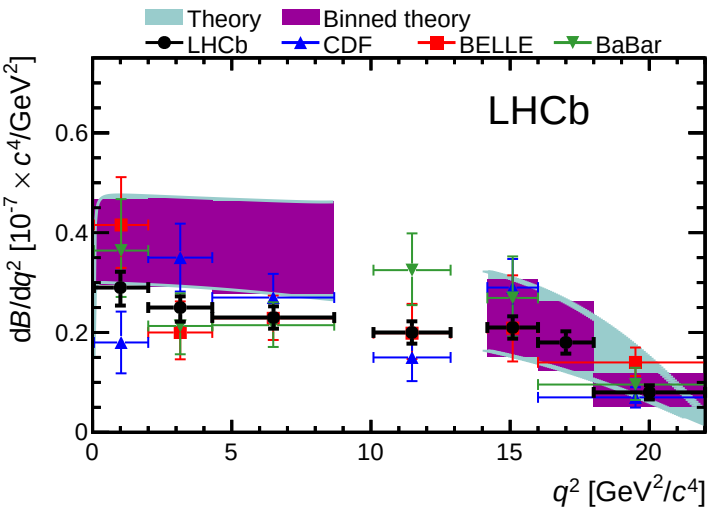

Figure 1: Differential branching fraction of $B^+ \to K^+\mu^+\mu^-$ as a function of the dimuon invariant mass squared, q^2. The SM theory prediction is given as the continuous cyan (light) band and the rate-average of this prediction across the q^2 bin is indicated by the purple (dark) region. No SM prediction is included for the regions close to the narrow $c\bar{c}$ resonances. Previous results from BaBar [1], Belle [2] and CDF [3] are included for reference.

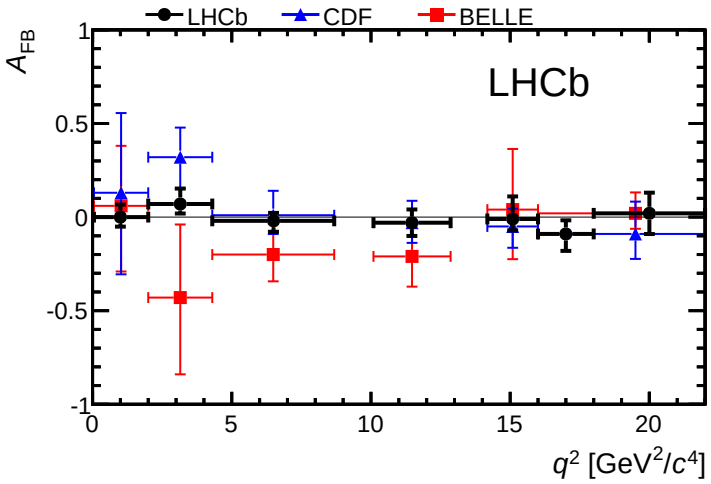

Figure 2: Dimuon forward-backward asymmetry, $A_{\rm FB}$, for $B^+ \to K^+\mu^+\mu^-$ as a function of the dimuon invariant mass squared, q^2. The values of $A_{\rm FB}$ measured by Belle [2] and CDF [3] are included for reference.