

# 1 Supplementary material for LHCb-PAPER-2014-032

Table 1: Values of  $\mathcal{A}_{CP}$  in  $B^0 \rightarrow K^{*0}\mu^+\mu^-$  decays in each of the 14  $q^2$  bins used in the analysis, as well as two larger bins for comparison to theoretical predictions. The first uncertainties are statistical and the second are systematic.

$q^2$ bin [GeV <sup>2</sup> /c <sup>4</sup> ]	Yield	$\mathcal{A}_{CP}$
0.10–0.98	304 ± 18	−0.087 ± 0.060 ± 0.006
1.10–2.00	105 ± 11	−0.176 ± 0.106 ± 0.009
2.00–3.00	120 ± 13	−0.146 ± 0.102 ± 0.008
3.00–4.00	101 ± 12	−0.013 ± 0.113 ± 0.014
4.00–5.00	120 ± 13	−0.076 ± 0.106 ± 0.012
5.00–6.00	143 ± 13	−0.030 ± 0.097 ± 0.009
6.00–7.00	144 ± 14	0.020 ± 0.095 ± 0.008
7.00–8.00	177 ± 15	0.099 ± 0.087 ± 0.006
11.0–11.8	144 ± 14	−0.021 ± 0.093 ± 0.007
11.8–12.5	147 ± 14	0.031 ± 0.093 ± 0.022
15.0–16.0	205 ± 16	−0.125 ± 0.075 ± 0.009
16.0–17.0	216 ± 16	−0.002 ± 0.074 ± 0.010
17.0–18.0	169 ± 14	−0.059 ± 0.085 ± 0.009
18.0–19.0	105 ± 11	−0.054 ± 0.108 ± 0.016
1.1–6.0	582 ± 28	−0.094 ± 0.047
15.0–19.0	632 ± 28	−0.074 ± 0.044

Table 2: Values of  $\mathcal{A}_{CP}$  in  $B^+ \rightarrow K^+ \mu^+ \mu^-$  decays in each of the 17  $q^2$  bins used in the analysis, as well as two larger bins for comparison to theoretical predictions. The first uncertainties are statistical and the second are systematic.

$q^2$ bin [ $\text{GeV}^2/c^4$ ]	Yield	$\mathcal{A}_{CP}$
0.10–0.98	$387 \pm 22$	$0.088 \pm 0.057 \pm 0.001$
1.10–2.00	$277 \pm 19$	$-0.004 \pm 0.068 \pm 0.002$
2.00–3.00	$367 \pm 22$	$0.042 \pm 0.059 \pm 0.001$
3.00–4.00	$334 \pm 21$	$-0.034 \pm 0.063 \pm 0.001$
4.00–5.00	$307 \pm 20$	$-0.021 \pm 0.064 \pm 0.001$
5.00–6.00	$332 \pm 21$	$0.031 \pm 0.062 \pm 0.002$
6.00–7.00	$355 \pm 22$	$0.026 \pm 0.060 \pm 0.001$
7.00–8.00	$371 \pm 22$	$0.041 \pm 0.059 \pm 0.002$
11.0–11.8	$232 \pm 18$	$-0.047 \pm 0.076 \pm 0.002$
11.8–12.5	$247 \pm 17$	$0.018 \pm 0.070 \pm 0.002$
15.0–16.0	$287 \pm 19$	$0.120 \pm 0.065 \pm 0.004$
16.0–17.0	$287 \pm 19$	$0.028 \pm 0.066 \pm 0.001$
17.0–18.0	$349 \pm 21$	$-0.030 \pm 0.058 \pm 0.001$
18.0–19.0	$222 \pm 17$	$-0.061 \pm 0.074 \pm 0.003$
19.0–20.0	$121 \pm 13$	$-0.048 \pm 0.105 \pm 0.003$
20.0–21.0	$95 \pm 12$	$-0.012 \pm 0.120 \pm 0.003$
21.0–22.0	$50 \pm 8$	$-0.290 \pm 0.161 \pm 0.004$
1.1–6.0	$1618 \pm 46$	$0.004 \pm 0.028$
15.0–22.0	$1416 \pm 43$	$-0.005 \pm 0.030$

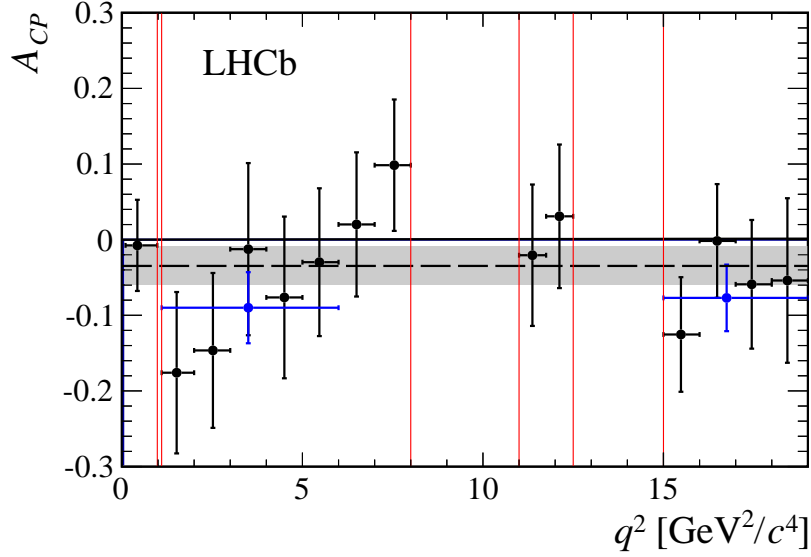


Figure 1: Values of  $\mathcal{A}_{CP}$  for  $B^0 \rightarrow K^{*0} \mu^+ \mu^-$  decays in each of the the 14  $q^2$  bins used in the analysis. The error bars are the sum of the statistical and systematic uncertainties in quadrature. The dashed line represents the weighted average value, and the grey band indicates  $\pm 1\sigma$ . The blue points are the data points in the larger theory bins. The vertical red lines show the  $\phi(1020)$ ,  $J/\psi$ , and  $\psi(2S)$  regions, which are vetoed.

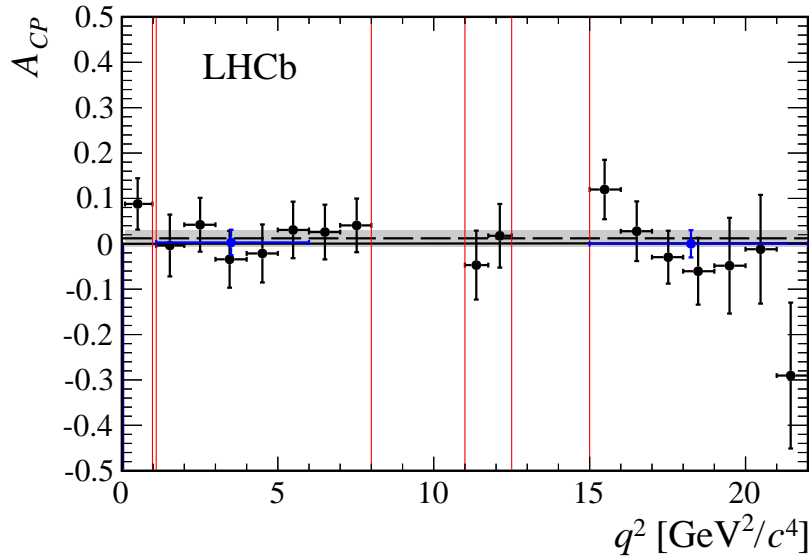


Figure 2: Values of  $\mathcal{A}_{CP}$  for  $B^+ \rightarrow K^+ \mu^+ \mu^-$  decays in each of the the 17  $q^2$  bins used in the analysis. The error bars are the sum of the statistical and systematic uncertainties in quadrature. The dashed line represents the weighted average value, and the grey band indicates  $\pm 1\sigma$ . The blue points are the data points in the larger theory bins. The vertical red lines show the  $\phi(1020)$ ,  $J/\psi$ , and  $\psi(2S)$  regions, which are vetoed.