Appendix A

$B^0 \to K^0\mu^+\mu^-$ differential branching ratio	
LHCb 2014 [266]	
Bin (GeV^2)	Measurement ($\times 10^9$)
$[0.1 - 2.0]$	$12.2^{+5.9}_{-5.2} \pm 0.6$
$[2.0 - 4.0]$	$18.7^{+5.5}_{-4.9} \pm 0.9$
$[4.0 - 6.0]$	$17.3^{+5.3}_{-4.8} \pm 0.9$
$[15.0 - 22.0]$	$9.5^{+1.6}_{-1.5} \pm 0.5$
CDF[262]	
$[0.0 - 2.0]$	$24.5 \pm 15.9 \pm 2.1$
$[2.0 - 4.3]$	$25.5 \pm 17.0 \pm 3.5$

Table A.1: Experimental measurement of the branching ratio of $B^0 \to K^0\mu^+\mu^-$

$B^+ \to K^+\mu^+\mu^-$ differential branching ratio	
LHCb 2014 [266]	
Bin (GeV^2)	Measurement ($\times 10^9$)
$[1.1 - 2.0]$	$23.3 \pm 1.5 \pm 1.2$
$[2.0 - 3.0]$	$28.2 \pm 1.6 \pm 1.4$
$[3.0 - 4.0]$	$25.4 \pm 1.5 \pm 1.3$
$[4.0 - 5.0]$	$25.4 \pm 1.5 \pm 1.3$
$[5.0 - 6.0]$	$23.1 \pm 1.4 \pm 1.2$
$[15.0 - 22.0]$	$22.1 \pm 1.4 \pm 1.1$
CDF[262]	
$[0.0 - 2.0]$	$18.0 \pm 5.3 \pm 1.2$
$[2.0 - 4.3]$	$31.6 \pm 5.4 \pm 1.8$

Table A.2: Experimental measurement of the branching ratio of $B^+ \to K^+\mu^+\mu^-$

$B^0 \to K^{*0}\mu^+\mu^-$ angular observables		
ATLAS 2017 [284]		
$q^2 \in [0.04, 2.0]$ GeV^2	$q^2 \in [2.0, 4.0]$ GeV^2	$q^2 \in [4.0, 6.0]$ GeV^2
$\langle F_L \rangle = 0.44 \pm 0.08 \pm 0.07$	$\langle F_L \rangle = 0.64 \pm 0.11 \pm 0.05$	$\langle F_L \rangle = 0.42 \pm 0.13 \pm 0.12$
$\langle S_3 \rangle = -0.02 \pm 0.09 \pm 0.02$	$\langle S_3 \rangle = -0.15 \pm 0.10 \pm 0.07$	$\langle S_3 \rangle = 0.00 \pm 0.12 \pm 0.07$
$\langle S_4 \rangle = 0.19 \pm 0.25 \pm 0.10$	$\langle S_4 \rangle = -0.47 \pm 0.19 \pm 0.10$	$\langle S_4 \rangle = 0.40 \pm 0.21 \pm 0.09$
$\langle S_5 \rangle = 0.33 \pm 0.13 \pm 0.06$	$\langle S_5 \rangle = -0.16 \pm 0.15 \pm 0.05$	$\langle S_5 \rangle = 0.13 \pm 0.18 \pm 0.07$
$\langle S_7 \rangle = -0.09 \pm 0.10 \pm 0.02$	$\langle S_7 \rangle = 0.15 \pm 0.14 \pm 0.09$	$\langle S_7 \rangle = 0.03 \pm 0.13 \pm 0.07$
$\langle S_8 \rangle = -0.11 \pm 0.19 \pm 0.07$	$\langle S_8 \rangle = 0.41 \pm 0.16 \pm 0.15$	$\langle S_8 \rangle = -0.09 \pm 0.16 \pm 0.0.04$
CMS 2017[46]		
$q^2 \in [1.0, 2.0]$ GeV^2	$q^2 \in [2.0, 4.3]$ GeV^2	$q^2 \in [4.3, 6.0]$ GeV^2
$\langle P_1 \rangle = 0.12^{+0.46}_{-0.47} \pm 0.06$	$\langle P_1 \rangle = -0.69^{+0.58}_{-0.27} \pm 0.09$	$\langle P_1 \rangle = 0.53^{+0.24}_{-0.33} \pm 0.18$
$\langle P_5' \rangle = 0.10^{+0.32}_{-0.31} \pm 0.12$	$\langle P_5' \rangle = -0.57^{+0.34}_{-0.31} \pm 0.15$	$\langle P_5' \rangle = -0.96^{+0.22}_{-0.21} \pm 0.16$
CMS 2015[264]		
$q^2 \in [1.0, 2.0]$ GeV^2	$q^2 \in [2.0, 4.3]$ GeV^2	$q^2 \in [4.3, 6.0]$ GeV^2
$\langle F_L \rangle = 0.64^{+0.10}_{-0.09} \pm 0.07$	$\langle F_L \rangle = 0.80 \pm 0.08 \pm 0.06$	$\langle F_L \rangle = 0.62^{+0.10}_{-0.09} \pm 0.07$
$\langle A_{FB} \rangle = -0.27^{+0.17}_{-0.40} \pm 0.07$	$\langle A_{FB} \rangle = -0.12^{+0.15}_{-0.17} \pm 0.05$	$\langle A_{FB} \rangle = -0.01 \pm 0.15 \pm 0.03$
LHCb 2015 [44]		
$q^2 \in [1.0, 2.0]$ GeV^2	$q^2 \in [2.0, 4.3]$ GeV^2	$q^2 \in [4.3, 6.0]$ GeV^2
$\langle F_L \rangle = 0.660^{+0.083}_{-0.077} \pm 0.022$	$\langle F_L \rangle = 0.876^{+0.109}_{-0.097} \pm 0.017$	$\langle F_L \rangle = 0.611^{+0.052}_{-0.053} \pm 0.017$
$\langle A_{FB} \rangle = -0.191^{+0.068}_{-0.080} \pm 0.012$	$\langle A_{FB} \rangle = -0.118^{+0.082}_{-0.90} \pm 0.007$	$\langle A_{FB} \rangle = -0.025^{+0.051}_{-0.052} \pm 0.004$
$\langle S_3 \rangle = -0.077^{+0.087}_{-0.105} \pm 0.005$	$\langle S_3 \rangle = 0.035^{+0.098}_{-0.089} \pm 0.007$	$\langle S_3 \rangle = 0.035^{+0.069}_{-0.068} \pm 0.007$
$\langle S_4 \rangle = -0.077^{+0.111}_{-0.113} \pm 0.005$	$\langle S_4 \rangle = -0.234^{+0.127}_{-0.144} \pm 0.006$	$\langle S_4 \rangle = -0.219^{+0.086}_{-0.084} \pm 0.008$
$\langle S_5 \rangle = 0.137^{+0.099}_{-0.094} \pm 0.009$	$\langle S_5 \rangle = -0.022^{+0.110}_{-0.103} \pm 0.008$	$\langle S_5 \rangle = -0.146^{+0.077}_{-0.078} \pm 0.011$
$\langle S_7 \rangle = -0.219^{+0.094}_{-0.104} \pm 0.004$	$\langle S_7 \rangle = 0.068^{+0.120}_{-0.112} \pm 0.005$	$\langle S_7 \rangle = -0.016^{+0.081}_{-0.080} \pm 0.004$
$\langle S_8 \rangle = -0.098^{+0.108}_{-0.123} \pm 0.005$	$\langle S_8 \rangle = 0.030^{+0.129}_{-0.131} \pm 0.006$	$\langle S_8 \rangle = -0.167^{+0.094}_{-0.091} \pm 0.004$
$\langle S_9 \rangle = -0.119^{+0.087}_{-0.104} \pm 0.005$	$\langle S_9 \rangle = -0.092^{+0.105}_{-0.125} \pm 0.007$	$\langle S_9 \rangle = -0.032^{+0.071}_{-0.071} \pm 0.004$
$q^2 \in [15.0, 19.0]$ GeV^2		
$\langle F_L \rangle = 0.344^{+0.028}_{-0.030} \pm 0.008$		
$\langle A_{FB} \rangle = -0.355^{+0.027}_{-0.027} \pm 0.009$		
$\langle S_3 \rangle = -0.163^{+0.033}_{-0.033} \pm 0.009$		
$\langle S_4 \rangle = -0.284^{+0.038}_{-0.041} \pm 0.007$		
$\langle S_5 \rangle = -0.325^{+0.036}_{-0.037} \pm 0.009$		
$\langle S_7 \rangle = 0.048^{+0.043}_{-0.043} \pm 0.006$		
$\langle S_8 \rangle = 0.028^{+0.044}_{-0.045} \pm 0.003$		
$\langle S_9 \rangle = -0.053^{+0.039}_{-0.039} \pm 0.002$		
CDF		
$q^2 \in [0.0, 2.0]$ GeV^2	$q^2 \in [2.0, 4.3]$ GeV^2	
$\langle F_L \rangle = 0.26^{+0.14}_{-0.13} \pm 0.04$	$\langle F_L \rangle = 0.72^{+0.15}_{-0.17} \pm 0.09$	
$\langle A_{FB} \rangle = 0.07^{+0.29}_{-0.28} \pm 0.11$	$\langle A_{FB} \rangle = -0.11^{+0.34}_{-0.45} \pm 0.16$	

Table A.3: Experimental measurement of the the angular observable of $B^0 \to K^{*0}\mu^+\mu^-$.

$B^+ \to K^{*+}\mu^+\mu^-$ differential branching ratio	
Bin (GeV^2)	Measurement ($\times 10^9$)
LHCb 2014[266]	
$[0.1 - 2.0]$	$59.2^{+14.4}_{-13.0} \pm 4.0$
$[2.0 - 4.0]$	$55.9^{+15.9}_{-14.4} \pm 3.8$
$[4.0 - 6.0]$	$24.9^{+11.0}_{-9.6} \pm 1.7$
$[15.0 - 19.0]$	$39.5^{+8.0}_{-7.3} \pm 2.8$
CDF[262]	
$[0.0 - 2.0]$	$75.0 \pm 46.8 \pm 8.8$
$[2.0 - 4.3]$	$49.4 \pm 35.8 \pm 6.3$

Table A.4: Experimental measurement of the branching ratio of $B^+ \to K^{*+}\mu^+\mu^-$.

$B_s^0 \to \phi\mu^+\mu^-$ differential branching ratio	
Bin (GeV^2)	Measurement ($\times 10^8$)
$[0.1 - 6.0]$	$2.58^{+0.33}_{-0.31} \pm 0.08 \pm 0.19$
$[15.0 - 19.0]$	$4.04^{+0.39}_{-0.38} \pm 0.13 \pm 0.30$

Table A.5: Experimental measurement of the differential branching ratio of $B_s^0 \to \phi\mu^+\mu^-$ [43]. The experimental errors are, from left to right, statistical, systematicand due to the uncertainty on the branching ratio of the normalization mode $B_s^0 \to J/\psi\phi$.

$B_s^0 \to \phi\mu^+\mu^-$ angular observables	
$q^2 \in [0.1, 2.0]$ GeV^2	$q^2 \in [2.0, 5.0]$ GeV^2
$\langle F_L \rangle = 0.20^{+0.08}_{-0.09} \pm 0.02$	$\langle F_L \rangle = 0.68^{+0.16}_{-0.13} \pm 0.03$
$\langle S_3 \rangle = -0.05^{+0.13}_{-0.13} \pm 0.01$	$\langle S_3 \rangle = -0.06^{+0.19}_{-0.23} \pm 0.01$
$\langle S_4 \rangle = 0.27^{+0.28}_{-0.18} \pm 0.01$	$\langle S_4 \rangle = -0.47^{+0.30}_{-0.44} \pm 0.01$
$\langle S_7 \rangle = 0.04^{+0.12}_{-0.12} \pm 0.00$	$\langle S_7 \rangle = -0.03^{+0.18}_{-0.23} \pm 0.01$
$q^2 \in [15, 19]$ GeV^2	
$\langle F_L \rangle = 0.29^{+0.07}_{-0.06} \pm 0.02$	
$\langle S_3 \rangle = -0.09^{+0.11}_{-0.12} \pm 0.01$	
$\langle S_4 \rangle = -0.14^{+0.11}_{-0.11} \pm 0.01$	
$\langle S_7 \rangle = 0.13^{+0.11}_{-0.11} \pm 0.01$	

Table A.6: Experimental measurement of the angular observables of $B_s^0 \to \phi\mu^+\mu^-$ [43]. The experimental errors are, from left to right, statistical and systematic.

$B \to X_s\mu^+\mu^-$ differential branching ratio	
Bin	Measurement ($\times 10^6$)
$q^2 \in [1, 6]$ GeV^2	0.66 ± 0.88
$q^2 > 14.2$ GeV^2	0.60 ± 0.31

Table A.7: Experimental measurement of the differential branching ratio of $B \to X_s\mu^+\mu^-$ [226].

$B^0 \to K^{*0}\mu^+\mu^-$ differential branching ratio	
Bin (GeV^2)	Measurement ($\times 10^7$)
LHCb 2016 [261]	
$[1.1, 2.5]$	$0.326^{+0.032}_{-0.031} \pm 0.010 \pm 0.022$
$[2.5, 4.0]$	$0.334^{+0.031}_{-0.033} \pm 0.009 \pm 0.023$
$[4.0, 6.0]$	$0.354^{+0.027}_{-0.026} \pm 0.009 \pm 0.024$
$[15.0, 19.0]$	$0.436^{+0.018}_{-0.019} \pm 0.007 \pm 0.030$
CDF[262]	
$[0.0, 2.0]$	$0.912 \pm 1.73 \pm 0.49$
$[2.0, 4.3]$	$0.461 \pm 1.19 \pm 0.27$
CMS 2013 [263]	
$[1.0, 2.0]$	$0.48^{+0.14}_{-0.12} \pm 0.04$
$[2.0, 4.3]$	$0.38 \pm 0.07 \pm 0.03$
CMS 2015 [264]	
$[1.0, 2.0]$	$0.46 \pm 0.07 \pm 0.03$
$[2.0, 4.3]$	$0.33 \pm 0.05 \pm 0.02$

Table A.8: Experimental measurement of the branching ratio of $B^0 \to K^{*0}\mu^+\mu^-$

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