$B^0 \to K^*\mu^-\mu^+$ MC requirements

Marcin Chrząszcz
mchrzasz@cern.ch
Thomas Blake
Nicola Serra

University of Zurich[UZH]

EWP WG meeting, CERN
November 24, 2016

Plans 1

⇛ MC required for $B \to K^* \mu\mu$ 2015+2016 analysis.

⇛ Numbers are taken from previous round with scaling factor $\frac{4}{3}$ for the cross section increase.

Decay	Event type	N.o. generated	N.o. stored
$B \to K^* J/\psi$ (physics)	11144001	2.6M	0.8M
$B \to K^* J/\psi$ (acceptance)	11114014	160M	48M
$B \to K^* \mu\mu$ (physics)	11114001	1.5M	0.5M
$\Lambda_b \to \Lambda(1530)\mu\mu$	15114000	1.5M	0.5M
$\Lambda_b \to pK\mu\mu$	15114011	2M	0.6M
$B_s^0 \to \phi\mu\mu$	13114002	1M	0.3M
$B_u \to K\mu\mu$	12113001	1M	0.3M

⇛ All productions will be filtered to save disk space.

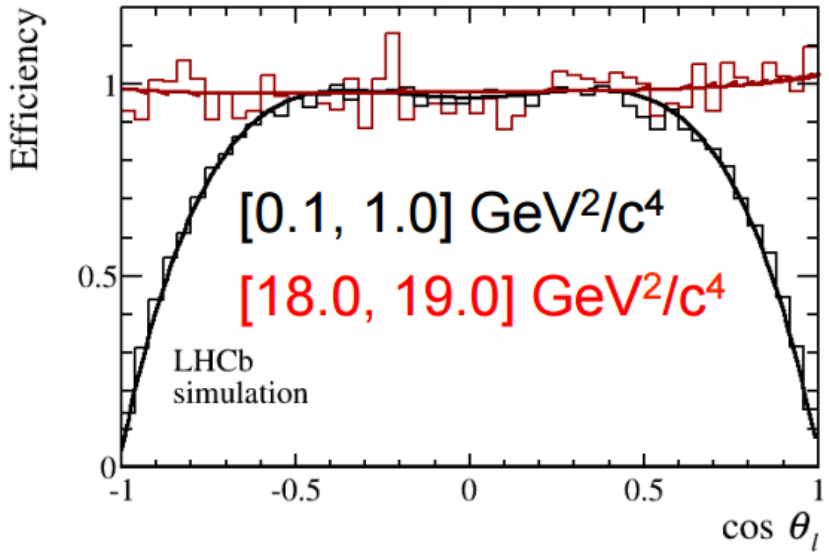
⇛ The large sample will be used to correct the detector acceptance.

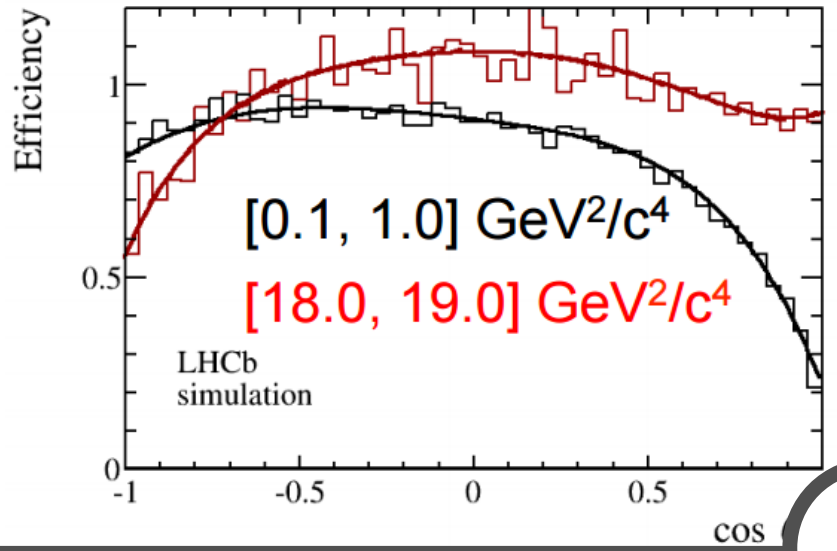
Acceptance

⇛ The kinematics of the decay $B \to K^* \mu\mu$ is described by 3 helicity angles($\cos\theta_k$, $\cos\theta_l$ ϕ) and the squared invariant mass of two muons (q^2).

⇛ Because of the 4D acceptance correction a lot of events are needed to populate the parameters space.

⇛ This sample will be enough to keep the related systematics order of magnitude below the expected statistical uncertainty.





Backup