

MC validation



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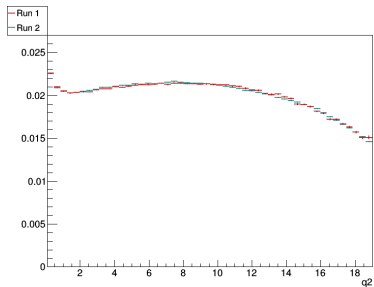
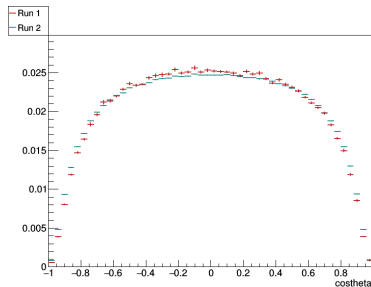
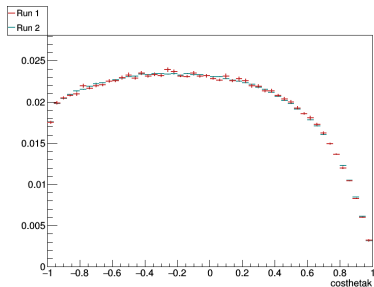


University of
Zurich ^{UZH}

$B^0 \rightarrow K^* \mu^- \mu^+$ meeting, CERN
April 11, 2017

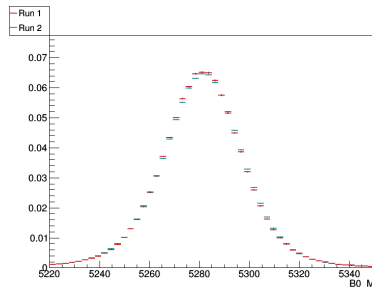
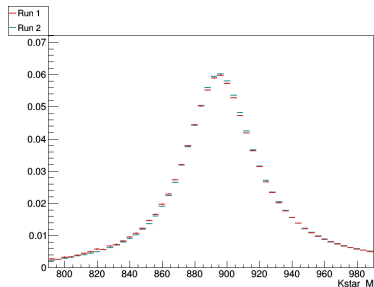
- ⇒ We have been ask by Vladimir to check our Filtered production.
- ⇒ So here is what we did:
- Run over the stripping on both of them.
 - Truth-match: `B0_BKGCAT==10`
 - Reweigh both Run1 and Run2 to be flat in q^2 .
 - Compare ;)

Angles



- ⇒ Angles are oki doki.
- ⇒ $\cos\theta_l$ is a tinny bit getter.

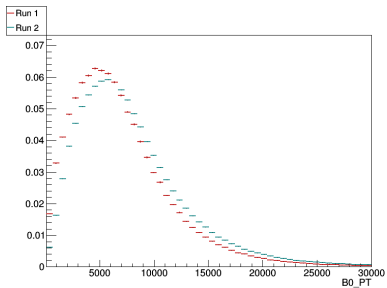
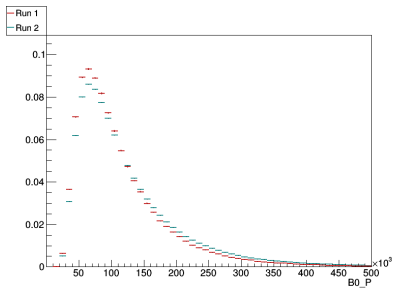
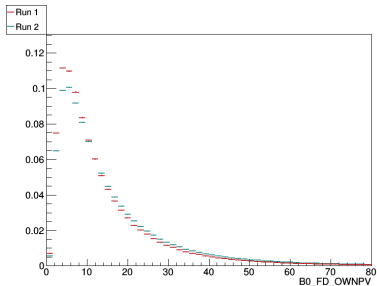
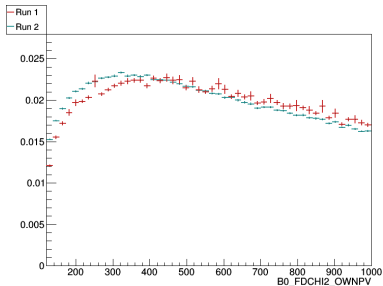
RunX invariants



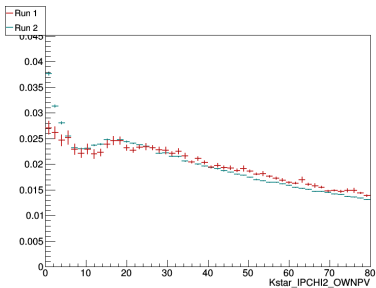
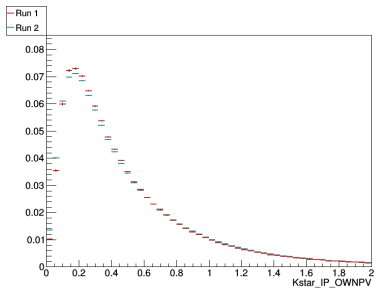
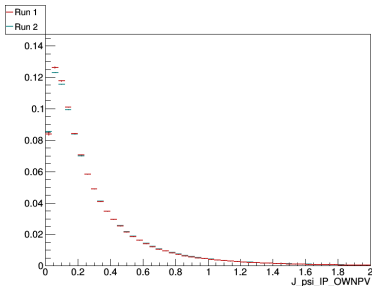
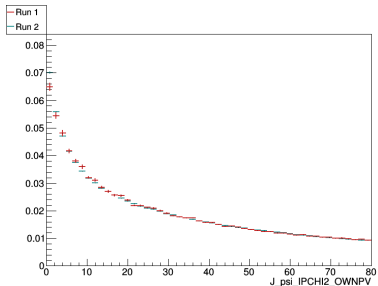
⇒ Masses are tiny shifted.

⇒ Overall oki-doki.

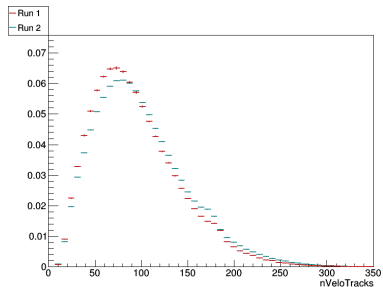
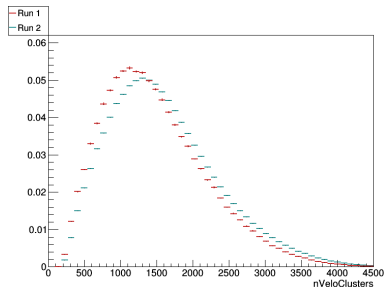
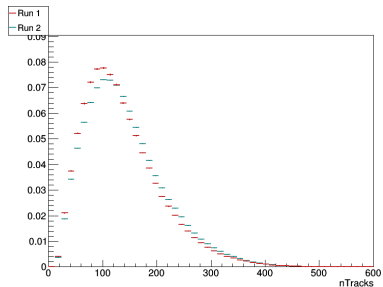
Kinematics



Kinematics



Global events



- ⇒ So there are differences in both kinematics and global events.
- ⇒ Naively I would expect this differences to be there.

Let's sum up what we know

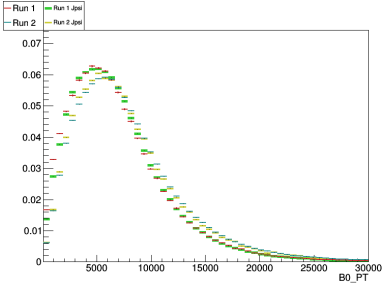
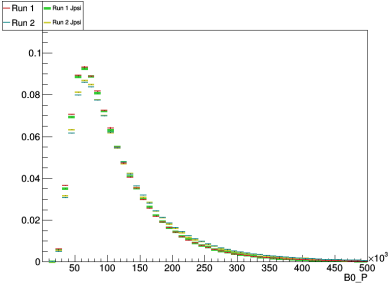
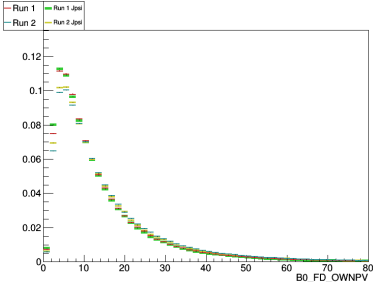
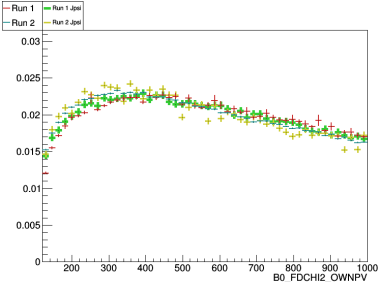
- ⇒ The angular efficiencies are essentially the same.
- ⇒ Invariantes are ok.
- ⇒ All the ntupling looks oki doki.
- ⇒ There are differences in the kinematics and global events quantities.
- ⇒ One would naively expect them to be there.
- ⇒ To be sure nothing is slipping our mind I have added to comparison $B \rightarrow K^* J/\psi$ Run1 and Run2.

Reminder:

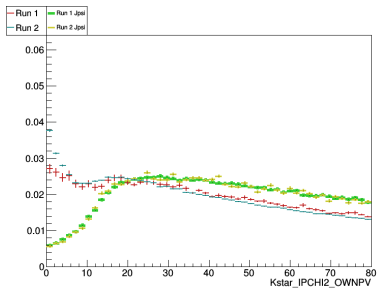
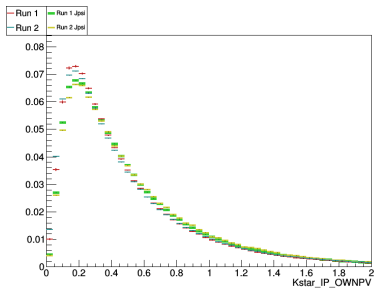
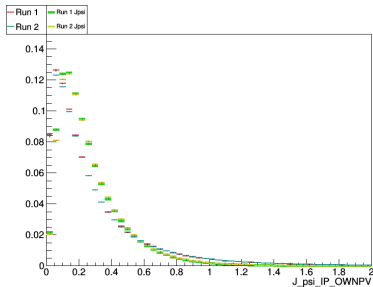
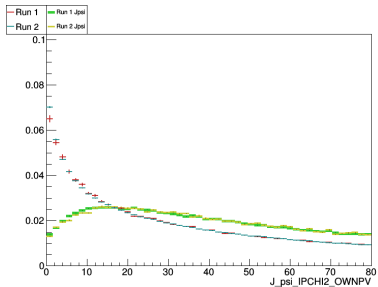
The MC $B \rightarrow K^* J/\psi$ for both Run1 and Run2 is non filtered. So if filtering is causing any problem we should see it there.

⇒ In the following plots the $B \rightarrow K^* J/\psi$ is added without any reweighing to make it flat in q^2 .

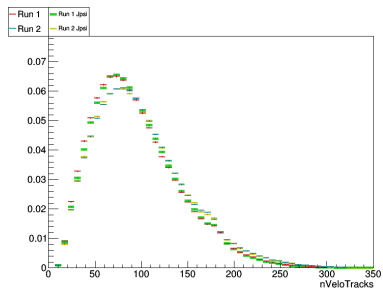
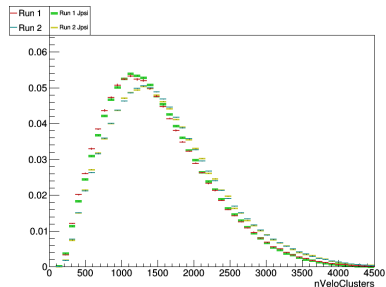
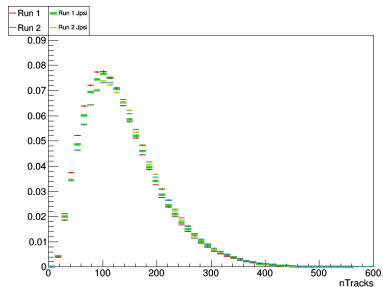
Kinematics



Kinematics



Global events



- ⇒ Everything looks ok with the filtering.
- ⇒ If you have more x-checks let me know.
- ⇒ Thing to think about: Move the rest of the production to LDST.

Brain storm?, credit to Andrea

