Table of Contents

Use case for flavour tagging calibration.

Outline of use case

The calibration of flavour tagging requires the analysis of a large number of channels of data. Some of them are potentially triggered in multiple ways like the semi-leptonic decays. It also requires to know the phase space used by each particular analysis, i.e., what Pt region, what sort of triggered events (TIS,TOS,TOB), etc...

Selection

Many selections are needed for the flavour tagging calibration. Channels like B+->J/Psi K+, Bs->Ds mu nu (X), Bd->D*mu nu (X), B+->D0bar mu nu (X), or B+->D0bar pi, Bs->Ds pi are deemed to be very useful to calibrate the tagging.

Issues

It may be posible that the "tagging group" provides a "calibrated" tool as a function of the relevant phase space variables, hence only a limited number of people in LHCb would do the calibration. This is the model at TeVatron. But, it could also be that this is not posible, then a large number of people may need to access a large number of files. Talking to the "tagging people" I got the impresion that this is not yet settled.

Number of streams from the detector

Most probably there would be no benefit in having several streams in this case.

Information required on trigger, stripping and luminosity

The calibration of the tagging needs to know how the event was triggered, and in particular, needs to classify the B candidate into TIS, TOS, TOB categories. I don't think information on luminosity is needed.

Number of streams in the stripping

In this analysis, few streams should be better, as most probably it would be needed to access a large number of files anyway.

Information stored for each event

For the large number of control samples used in the flavour tagging there would be an advantage of storing the B candidate that selected the event. In this way the subsequent flavour tagging could be performed in an analysis without concern about running all the selection algorithms again.

There could be a need for storing both flavour tag information and some event weight as well.