

Comments on LHCb-CONF-2011-060-001:

Measurement of Ξ_b^- and Ω_b^- masses using an integrated luminosity of 576 pb⁻¹ of pp collisions

- Title
We do not understand why 'using an integrated luminosity of 576 pb⁻¹ of pp collisions' was added to the title.
As soon as we add '576' or 'pp' we also have to add '7 GeV' and 'LHCb' as well.
- Lines 77-79 do not give substantial information and can be omitted.
- Figure 1
On the horizontal axes we would like to read ' $J/\psi \Xi^-$ invariant mass (MeV/c²)' and ' $J/\psi \Omega^-$ invariant mass (MeV/c²)'.
Only half of the numbers along the horizontal axes would make it more readable. Please remove (left) 2650, 5750,.. and (right) 5700, 5800,... .
In the caption the fit should be specified. Please, add 'unbinned extended maximum likelihood' before 'fit'.
- Table 1
In the caption remove ', and mass resolution', as the fixed widths of 9.1 and 9.5 MeV/c² are not included in the table.
- Table 2
Move the units (MeV/c²) to the table above the two columns with numbers.
Replace 'Quadratic sum' by 'Total systematic uncertainty'. And write in the text that the contributions to the systematic uncertainty are added in quadrature.
It is not directly evident that the 'average momentum scale' contribution to the systematic error of the mass is so much larger for the Ω_b^- . Can that be explained in the text?
- Figure 2
We think it is not correct to come with a new average for preliminary results. One suggestion would be to show in order of publication date D0(2007), CDF(2009) and PDG average (with the pink band) and below that our preliminary result of LHCb. Not only for Ξ_b^- , but also for the Ω_b^- mass comparison, where the PDG average is 6061 ± 40 MeV/c².
It would be nice if CDF[2009] and other references in the figure get their proper reference in the caption.
- Summary
As mentioned above we also consider it not correct to omit the Ω_b^- mass result of D0 from the mass comparison plot in Fig. 2.
Line 115-116 is considered to be wrong for the similar reasons. We should give a comparison of our preliminary results with both CDF and D0 results separately and not combine with either of them first.
Line 120 does not summarize something that has been discussed before in the section about 'Systematics'. We would like to read some explanation about the 'partial cancellation' of the momentum scale calibration correction that results in 1.2 MeV/c² systematic uncertainty of the mass difference.
This equation should start with $M(\Omega_b^-) - M(\Xi_b^-)$.