Observation of five new narrow Ω_c^0 states decaying into $\Xi_c^+ K^-$

The LHCb collaboration

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1. Why is the understanding of the resonant states of Ω_c^0 important? (**Mamun**)
2. What is large-flight distance significance? How is the dectector build to achieve and measure such a small distance? In order words, how is the dectector able to resolve primary and secondary vertex for the experiment? (**Tyler**)
3. Why are the two Gaussian functions used to describe the signal? Why use two Gaussian functions, rather than one (or some other function)? (**Som**)
4. What are the differences in the various decay modes of the seven mass states of Ω_c^0 that are predicted from the Heavy Quark Effective Theory (HQET)? What decay modes are mentioned in the paper? (**Sudhanva**)
5. How are particles, like π^- and K^-, identified? (**Taya**)
6. The paper says no narrow peaks observed in the pseudo-$\Xi_c^+\pi^-$ spectrum. How is this done? Why are there no peaks? (**Avinash**)
7. How does the paper justify the $\Omega_c(3188)^0$? Does it correspond to the theoretical prediction of other Ω_c^0 mass states? (**Bishnu**)
8. How can the spin-parity of the mass states match up by the experiment in response to theory? (**Doug**)
9. Highlight the difference in the mass states of Ω_c^0 from the theoretical predictions (HQET). Why are the peaks of the masses wide or narrow? (**Matt**)
10. How is the cut-based preselection and the multivariate selection done for the reconstruction process? (**Kristen**)
11. What is inclusive Ξ_c^+ sample? How does inclusive process affect the results? (**Shiv**)
12. How are the predictions of the mass states for Ω_c^0 from the Heavy Quark Effective Theory (HQEFT) different from the Lattice QCD calulations? (**Mahesh**)
13. Why is the background fit linearly in one plot and exponentially in the other? (**Cole**)
14. What is the importance of Feed-down in the experiment? How is it taken into account for the description of the data? (**Joey**)
15. What are Blatt-Weisskopf factors? How does one vary Breit-Wigner functions with these factors? (**Robert**)