LHC Seminar

Latest results on charmed baryons from the LHCb experiment

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Description Charmed baryons provide an ideal laboratory to probe non-perturbative strong interaction dynamics. The LHCb experiment, with its excellent vertexing, tracking and particle identification capabilities, is very suitable for the study of charmed baryons, and interesting results in this area have been obtained from several recent analyses of LHCb data. Following the discovery of the doubly charmed baryon Ξ_{cc}^{++} via its decay to $\Lambda_c^+ K^- \pi^+ \pi^+$, this state has now also been confirmed through its decay to the final state $\Xi_c^+ \pi^+$. In addition, the Ξ_{cc}^{++} lifetime has been measured for the first time and found to be $\tau(\Xi_{cc}^{++}) = 256^{+24}_{-22}$ (stat) ± 14 (syst) fs, which firmly establishes that the Ξ_{cc}^{++} baryon decays weakly. In a third analysis, the Ω_c^0 lifetime is measured to be 268 ± 24 fs, which is approximately four times larger than, and inconsistent with, the current world average, 69 ± 12 fs. These results will be reported in this presentation.

Organized by M. Mangano, M. Pepe-Altarelli, G. Unal..... Refreshments will be served at 10h30