

Event-activity-dependent beauty-baryon enhancement in simulations with color junctions

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Recent results from ALICE and CMS show a low-transverse-momentum enhancement of charm baryon-to-meson production ratios over model predictions based on e^+e^- collisions. Several mechanisms are proposed to understand this phenomenon. New measurements by the LHCb and ALICE experiments show a similar enhancement in the beauty sector. We explore this enhancement in terms of event activity using the color-reconnection beyond leading order approximation model. We propose sensitive probes relying on the event shape that will allow for the differentiation between the proposed beauty-production scenarios using freshly collected LHC Run-3 data, and we also compare these to predictions for charm. Our results will contribute to a deeper theoretical understanding of the heavy-flavor baryon enhancement and its relation to baryon enhancement in general.

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