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Study of doubly heavy baryon decays in light-front approach

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In this work, we study the transition processes of doubly heavy baryons $\Xi_{cc}^{++}, \Xi_{cc}^+, \Omega_{cc}^+, \Xi_{bc}^+, \Xi_{bc}^0, \Omega_{bc}^0$ and Ω_{bb}^- . At the quark level these transitions are depicted by the weak decays of $c \rightarrow d/s$ or $b \rightarrow u$ and the other two spectator quarks are viewed as a scalar diquark. We first derived the form factors of these transitions in light-front approach and then apply them to predict the semi-leptonic and non-leptonic decay widths of doubly heavy baryons. We find that some decay channels are sizable and are hopeful to be detected at the LHC experiment.

Summary

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