

Measuring spin correlations of bottom and charm quark pairs at the LHC

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Spin correlations have been studied in detail for top quarks at the LHC, but have not yet been explored for the other flavors of quarks. Utilizing the partial preservation of the quark spin information in baryons in the jet produced by the quark, we present possible analysis strategies for ATLAS and CMS to measure the spin correlations in $b\bar{b}$ and $c\bar{c}$ samples. We find that some measurements are feasible with existing datasets while others will become possible at the HL-LHC. The proposed measurements will provide new information on the polarization transfer from quarks to baryons and might even be sensitive to physics beyond the Standard Model.

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