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Predicting double-spin asymmetry of heavy-flavor hadrons with basis light-front quantization

A new measurement of the heavy-flavor hadron double-spin asymmetry has been proposed for the future Electron-Ion Collider. Using basis light-front quantization as a non-perturbative approach, we generate the proton's PDFs. By convolving these PDFs with coefficient functions, we calculate the structure function and the heavy-flavor hadron double longitudinal spin asymmetry. These results offer theoretical support for the Electron-Ion Collider experiment and allow for investigation into the contribution of polarized gluons to the proton's spin.

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