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Electron Wigner distributions from light front wave functions

We study the Wigner distributions for a physical electron, which reveal the multidimensional images of the electron. The physical electron is considered as a composite system of a bare electron and photon. The Wigner distributions for an unpolarized, longitudinally polarized and transversely polarized electron are presented in transverse momentum plane as well as in impact parameter plane. We also evaluate all the leading twist generalized transverse momentum distributions (GTMDs) for electron.

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