

# Accessing the quark orbital angular momentum with Wigner distributions

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## Summary

The quark orbital angular momentum (OAM) has been recognized as an important piece of the proton spin puzzle. A lot of effort has been invested in trying to extract it quantitatively from the generalized parton distributions (GPDs) and the transverse-momentum dependent parton distributions (TMDs), which are accessed in high-energy processes and provide three-dimensional pictures of the nucleon. Recently, we have shown that it is more natural to access the quark OAM from the phase-space or Wigner distributions. We discuss the concept of Wigner distributions in the context of quantum field theory and show how they are related to the GPDs and the TMDs. We summarize the different definitions dis

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