

Lectures 2 & 3

- ▶ Wednesday March 4 at 12:00 Noon
Room L104 (CC)
- ▶ Wednesday March 18 at 3:00 p.m.
Room L104 (CC)

Jefferson Lab

mini lecture series

“transverse thinking”: an introduction to TMDs

Speaker: Alessandro Bacchetta



With the 12 GeV upgrade, a good fraction of experimental efforts at JLab will be devoted to studying semi-inclusive deep inelastic scattering (SIDIS). The SIDIS cross section depends, among other variables, also on the azimuthal angle and the transverse momentum of the outgoing hadron with respect to the virtual photon axis. In a factorized picture, this dependence can be related to transverse-momentum-dependent parton distribution functions (TMDs) and fragmentation functions. They are multi-dimensional generalizations of standard collinear PDFs and intuitively provide a 3D imaging of the partonic structure of the nucleon in momentum space. The aim of the lectures is to introduce and analyze TMDs and discuss their phenomenology, with a particular emphasis on topics of relevance to JLab. The program will consist of approximately five lectures. The lectures are aimed mainly at experimentalists and graduate students.