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# The hadronic tensor from four-point functions on the lattice

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The hadronic tensor is the central non-perturbative object in the calculation of the cross section of lepton-hadron interactions like neutrino-nucleon scattering. It is usually parameterized in terms of structure functions, which encode all necessary information independently of the kinematic region. Moreover, the hadronic tensor can be factorized in terms of parton distribution functions (PDFs) and contains information on hadron resonances. On the lattice, we can calculate the corresponding matrix element of two quark-bilinear currents with a relative Euclidean time separation. The reconstruction of the hadronic tensor requires appropriate dealing with the corresponding inverse problem. In our current work on the nucleon, we calculate the required four-point functions in a brought kinematic region using a clover fermion ensemble at pion mass $m_\pi = 223$ MeV and lattice spacing $a = 0.0856$ fm. In this talk, I will give an overview of our simulation and present some first preliminary results.

## Parallel Session (for talks only)

Structure of hadrons and nuclei

**Author:** ZIMMERMANN, Christian (University of Kentucky)

**Presenter:** ZIMMERMANN, Christian (University of Kentucky)

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