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## A self-consistent determination of proton and nuclear PDFs at the Electron Ion Collider

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We quantify the potential impact of unpolarized lepton-proton and lepton-nucleus inclusive DIS cross sections measured at the Electron-Ion Collider (EIC) on the unpolarized proton and nuclear Parton Distribution Functions (PDFs). To this purpose we include neutral- and charged-current DIS pseudodata in a coherent set of global PDF determinations based on the NNPDF methodology. We find that the EIC could reduce the uncertainty of the light quark PDFs of the proton at large values of the momentum fraction  $x$ , and, more significantly, of the quark and gluon PDFs of nuclei, especially of heavy ions, at small and large  $x$ . We illustrate how the improved precision of nuclear PDFs can impact predictions for the interaction of ultra-high energy cosmic neutrinos with matter.

**Primary author:** ROJO, Juan (VU Amsterdam)

**Presenter:** ROJO, Juan (VU Amsterdam)

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