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Opportunities for inclusive diffraction at EIC

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Possibilities for inclusive diffraction in electron-proton/nucleus collider, EIC in the US are analyzed. We find that thanks to the excellent forward proton tagging, the EIC will be able to access the wider kinematical range of longitudinal momentum fraction and momentum transfer of the leading proton than at HERA. This opens up the possibilities of measurement of subleading diffractive exchanges. The extended t -range would allow for the precise extraction of 4-dimensional reduced cross section in diffraction. In addition the varying beam setups at EIC would allow for precise measurements of longitudinal diffractive structure function. In the nuclear case EIC would be the first experiment to allow for the precise extraction of the nuclear diffractive parton distribution functions. In this talk we shall present a set of wide range of detailed studies of inclusive diffraction at the Electron Ion Collider and discuss the requirements on the experimental setup.

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