

XXVIII International Workshop on Deep Inelastic Scattering and Related Subjects



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DIS on a Holographic Nucleus

I will discuss DIS on a nucleus described as an extremal RN-AdS black hole with holographic quantum fermions in bulk. In leading order, the structure functions follow from the absorption of the R-current on the black-hole which most contribution at low- x . At next to leading order, the structure functions receive contributions from the bulk quantum fermions. DIS scattering off these fermions close to the black-hole horizon yields anomalous partonic distributions mostly at large- x , as well as modified hard scattering rules. Far from the horizon, the fermions are mostly sensitive to the AdS5 geometry of the asymptotic space with a fixed charge or fermion density. We construct explicitly the R-ratio for such a nucleus and compare it to existing measurements for light and heavy nuclei.

Primary author: Dr ZAHED, Ismail (SBU/CFNS)

Presenter: Dr ZAHED, Ismail (SBU/CFNS)

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