Institut Henri Poincaré
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String Theory in Greater Paris

Rencontres Théoriciennes

“Supergravité, théorie des cordes et théorie M”

Jeudi 22 Juin 2023, 10:00

Francesco Bigazzi

U. Firenze

Nucleon Spin Structure in Holographic QCD

I will consider polarized inelastic electron-nucleon scattering at low momentum transfer, in the Witten-Sakai-Sugimoto model of holographic QCD. I will focus, in particular, on resonance production contributions to the nucleon spin structure functions. I will compute the helicity amplitudes for nucleon-resonance transitions and the resonance contributions to the neutron and proton generalized spin polarizabilities. Extrapolating the model parameters to realistic QCD data, the analysis, triggered by recent experimental results from Jefferson Lab, shows that the Delta(1232) resonance gives the dominant contribution to the spin polarizabilities at low momentum transfer. The contribution is negative and increases towards zero as the momentum transfer increases.

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