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Elastic proton-proton and pion-proton scattering in holographic QCD

Tuesday 22 July 2025 12:00 (40 minutes)

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https://journals.aps.org/prd/abstract/10.1103/PhysRevD.107.014018 https://journals.aps.org/prd/abstract/10.1103/PhysRevD.108.034010
https://journals.aps.org/prd/abstract/10.1103/PhysRevD.108.066001 https://journals.aps.org/prd/abstract/10.1103/PhysRevD.109.074010
Abstract The total and differential cross sections of elastic proton-proton and pion-proton scattering processes are studied in the framework of holographic QCD, considering the Pomeron and Reggeon exchange in the Regge regime. In our model setup, the Pomeron and Reggeon exchange are described by the Reggeized spin-2 glueball and vector meson propagator, respectively. For the differential cross sections, contributions of the Coulomb interaction are also taken into account. Adjustable parameters involved in the model are determined with the experimental data, and it is presented that the resulting cross sections are consistent with the data in a wide kinematic region.

Presenter: WATANABE, Akira

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