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## Flavor Asymmetry of the Proton Sea in Chiral Effective Theory

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While the leading nonanalytic behavior in chiral effective theory must be universal, there has been a puzzling factor  $4/3$  difference in the coefficient of the leading nonanalytic contribution to the vertex renormalization constant of the nucleon or equivalently that of the pion for more than a decade. We have recently resolved this lingering factor difference by carefully analyzing the vertex renormalization constant with both pseudovector and pseudoscalar coupling theories and demonstrated how one may correctly achieve the equivalence between these two theories. We discuss this resolution with respect to the phenomenological application to the flavor asymmetry in the proton sea from the chiral effective theory. The on-shell splitting function of the pion from the nucleon has a direct consequence for the analysis of the leading neutron production at HERA as well as the proposed measurement of tagged deep inelastic scattering (TDIS) at JLab.

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