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Results on the Moments of the Spin Structure Functions: Sum Rules and Polarizabilities

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Based on general physics principles, sum rules relate integrations of the structure functions to static properties, or, in the generalized situation, to the forward Compton amplitudes. Sum rules provide a powerful way to study nucleon structure and the strong interaction. Nucleon spin structure functions g_1 and g_2 have been measured over a wide range of kinematics. Moments of the spin structure functions were extracted from very low to medium range of Q^2 to study the spin sum rules and the spin polarizabilities. The results were compared with calculations, in particular, at low Q^2, with Chiral Perturbation Theory calculations. Discussions and perspectives will be presented.