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Analysis of world polarized DIS data with small-x, Large $N_c\&N_f$ helicity evolution

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In order to solve the proton spin problem, the small-x asymptotics of the helicity parton distribution functions (hPDFs) need to be understood. New theory has been developed for the small-x evolution of these hPDFs, able to extrapolate the small-x behaviour of the quark and gluon hPDFs. At large $N_c\&N_f$, these evolution equations close and are amenable to numerical computation. In this talk we will present the phenomenological analysis of this theory by describing the world data on the g_1 structure function within the JAM global analysis framework. Beyond this, we investigate the qualitative behaviour of the quark and gluon hPDFs and the challenges involved with measuring them.

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