The Jefferson Lab Angular Momentum Collaboration

JAM

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Halls A, B and C
Objectives and motivation

- The (very general) aim is the study of the angular-momentum-dependent structure of hadrons

- A first (immediate) objective is the production of spin-dependent parton distributions and a parametrization of structure functions \( (g_1, g_2) \) with emphasis on JLab data

- We intend to bring together theorists and experimentalists from the Jefferson Lab community; representatives of Halls A, B and C needed

- Eventually we would consider extensions and/or related studies (NNLO, unpolarized PDFs, TMDs ... ideas are welcome!)
Advantages and specialties

- Emphasis on JLab physics: large Bjorken-$x$ at low and intermediate values of $W$ and $Q^2$, and the impact of JLab data on polarized PDFs

- Theoretical + Experimental collaboration profiting from the best of both; e.g. suggestions for future experiments could come out

- Experimental knowledge needed for data treatment; we would like to be as independent of assumptions and theoretical bias as possible (e.g. use asymmetries $A_\parallel, A_\perp$ instead of structure functions)

- Theory center expertise in QCD, nuclear corrections, higher-twist etc. crucial to carry out the analysis

- Parallel determination of polarized and unpolarized distributions (and corrections) would increase consistency
Procedure and time schedule

▶ Create a database with all relevant (DIS, SIDIS, hadron colliders) data and proceed to the QCD analysis

▶ An immediate need is to complete the data collection (starting from Osipenko’s database); especially all data from JLab experiments

▶ Code development is on the way and should be finished in (few) weeks

▶ We aim for preliminary results by late spring or summer

▶ Anyone wishing to be actively involved in the project is welcome

Please follow us up at

http://www.jlab.org/jam