

Recent results from the HERMES experiment at DESY

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The HERMES (**H**ER**A** **M**Easurement of **S**pin) experiment at DESY studies the deep inelastic scattering of polarised electrons/positrons on gaseous polarised targets of hydrogen and deuterium in order to measure the spin structure functions of the nucleons.

Scattered electrons/positrons and particles produced in the deep-inelastic electron-nucleon interaction are detected and identified by an open-geometry forward spectrometer with large momentum and solid angle acceptance.

A brief overview of the large physics program will be given. The most recent and important physics results will be discussed, i.e. the direct flavor decomposition and the determination of the transversity distribution.

Polarised DIS data on longitudinally polarised hydrogen and deuterium targets have been used to determine double-spin asymmetries of cross sections. The most precise available measurement of semi-inclusive measurements has been obtained and will be presented, showing for the first time the independent determination of five out six quarks polarization in the nucleon [1].

A transversely polarised target has been installed for the HERA-II run, providing access to transversity related quantities in semi-inclusive scattering [2]. Azimuthal moments for both the Collins and Sivers mechanism are extracted for the full period 2002-2005 and will be discussed.

[1] A. Airapetian *et al.* [HERMES Collaboration], Physical Review D 71 (2005) 012003

[2] A. Airapetian *et al.* [HERMES Collaboration], Physical Review Letters 94 (2005) 012002

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