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Longitudinal and transverse spin structure of the nucleon at COMPASS

C. Marchand[1]

[1] *Centre d'Etudes de Saclay, CEA/IRFU/SPhN, 91191 Gif-sur-Yvette Cedex, France*

Contact email: *claude.marchand@cea.fr*

COMPASS is a multi-purpose xed target experiment at CERNs Super Proton Synchrotron, dedicated to the study of the structure of the nucleon.
In 2010 and 2011, high statistics data for inclusive and semi-inclusive deep inelastic scattering have been collected using polarized muons on a polarized NH3 target, at energies from 160 to 200 GeV/c. Measurements of asymmetries in longitudinal spin configuration give access to the quark and gluon polarization, key inputs to describe the nucleon spin. The new data obtained at COMPASS in 2011 improve significantly the statistical accuracy at low xBjorken, and help to better constrain the quark helicities in this region. High precision asymmetry measurements in 2010 in transverse spin configuration have allowed to refine the knowledge of several Transverse Momentum Dependent distribution functions, amongst of which Collins and Sivers, and their study gives valuable input to the yet poorly known quark transverse spin distributions.