Abstract Submitted
for the HAW09 Meeting of
The American Physical Society

Measurements of the Gluon Polarization in the Nucleon at COMPASS TAKAHIRO IWATA, Yamagata University, SHIGERU ISHIMOTO, KAORI KONDO, NORIHIRO DOSHITA, Yamagata University, TAKEO HASEGAWA, Miyazaki University, NAOAKI HORIKAWA, Chubu University, TATSURO MATSUDA, Miyazaki University, TAKUMA MICHIGAMI, Yamagata University, COMPASS COLLABORATION — The gluon polarization in the nucleon has been investigated in COMPASS at CERN with a polarized muon beam and a longitudinally polarized deuteron target. The gluon polarization was determined by longitudinal double spin asymmetries for the photon-gluon-fusion (PGF) process. Identifying the PGF by detecting either a charm hadron("open charm"), namely D^0 meson decaying into charged K π, or two light hadrons with high Pt("high Pt hadron"), the gluon polarization values were extracted with a help of LO-QCD. In this talk, the final result from open charm events taken from 2002 to 2006 (all the deuteron data) and the recent results from high Pt hadrons taken from 2002 to 2004 will be presented. The former case, which is expected to be ideal process with less physical background, shows negative polarization with relatively large error due to limited statistics. While, the results from the high Pt hadron events giving smaller errors show small gluon polarization values around 0.1 for the gluon's Bjorken-x.

Takahiro Iwata
Yamagata University

Date submitted: 30 Jun 2009 Electronic form version 1.4