The gaseous microstrip detectors Micromegas for the COMPASS experiment

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One of the main objectives of the COMPASS experiment at CERN is the measurement of the contribution of the gluon spin to the nucleon spin, through photon gluon fusion, in the scattering of polarized muons off polarized nucleons. This measurement requires high resolution tracking detectors, with low radiation length and high rate capability (20 MHz in 40x40 cm^2). For this purpose we have developed and optimized gaseous microstrip detectors 'Micromegas'[1]. Five planes (5000 strips) have already been operated with success in the summer 2001 in the COMPASS environment. Twelve planes assembled in 3 stations of 4 views XYUV, are foreseen in the COMPASS spectrometer. Performances and results obtained with these detectors will be described.

Figure 1: A Micromegas doublet : U and V views.

References

[1] D.Thers et al. NIM**A469** (2001) 133.