Contribution ID: **593** Type: **Poster**

Forward-backward Charge Asymmetry for Muon Pairs via Z/gamma* at 7 TeV in CMS

We present a study of the forward-backward charge asymmetry (A_FB) for mu+mu- pairs produced via an intermediate Z/gamma*at 7 TeV center-of-mass energy in the CMS experiment. Unlike in the case of proton-antiproton collisions, the quark and anti-quark directions are unknown at the LHC and this lack of information leads to a dilution in this asymmetry parameter. We are able to recover the true asymmetry by defining the quark direction as the direction of motion for the Drell-Yan pair and by accounting for misidentification probabilities on an event-by-event basis. We will present preliminary distributions for the Z/gamma* data sample (˜1 pb-1). The statistical error on the asymmetry becomes systematics limited around 100 pb-1.

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Track Classification: 01 - Early Experience and Results from LHC