Contribution ID: **7** Type: **not specified**

Monte-Carlo simulation of lepton pair production in ”p pbar –> mu+mu- + X” events at E_beam = 5 GeV

Friday, 7 September 2012 12:00 (30 minutes)

The lepton pair production in PANDA experiment in collisions of antiproton beam (E_beam = 14 GeV) with proton target is studied on the basis of event samples simulated with PYTHIA6 generator. The considered quark level subprocesses goes through the production of virtual photon which converts into lepton pair (q qbar –> gamma* –> mu+mu-) having a continuous energy spectrum of the final lepton pair invariant mass. Quark-antiquark annihilation process of hadron-hadron collision may provide an interesting information about the quark dynamics inside the hadron. The measurement of the total transverse momentum of a lepton pair as a whole may provide an important information about the intrinsic transverse momentum k_T that appears due to the Fermi motion of quarks inside the nucleon.
The distributions of different kinematical variables of final muons are presented. The problems due to the presence of fake leptons that appear from meson decays, as well as due to the background caused by minimum bias events and other QCD processes, are also discussed. The set of cuts which allows one to separate the signal events with lepton pairs from this kind of background events is proposed.

Primary author: Ms SKACHKOVA, Anna (JINR)

Presenter: Ms SKACHKOVA, Anna (JINR)

Session Classification: Talks