MUON TARGET STUDIES: TAPERED CAPTURE SOLENOID

HISHAM KAMAL SAYED
BROOKHAVEN NATIONAL LABORATORY
Sept. 4, 2012
DISTRIBUTIONS OF PARTICLES SURVIVED THE FRONT END AND ACCELERATION CUTS

1- Taper solenoid field: 20 --> 1.5 T over 15 m
2- ICOOL applied aperture for decay region R_aperture= 0.4 m
3- Good particles are those who satisfy the following conditions/cuts
   1- Survived the phase rotator and cooling sections
   2- Fall within required acceleration acceptance cuts
      - 0.17 <Pz< 0.27 GeV
      - Transverse cut R < 0.3 m
      - Longitudinal cut 0.15 m
DISTRIBUTIONS OF PARTICLES SURVIVED THE FRONT END AND ACCELERATION CUTS

Particle radii distribution

Taper solenoid field: 20 --> 1.5 T over 15 m
DISTRIBUTIONS OF PARTICLES SURVIVED THE FRONT END AND ACCELERATION CUTS

Transverse Momentum distribution

DISTRIBUTIONS OF PARTICLES SURVIVED THE FRONT END AND ACCELERATION CUTS

Transverse Momentum distribution