Particle Distribution

Distribution at $z = 0.0$

Muon/Proton Distribution at $z = 0.0$

- All Particles 8 GeV
- All Particles 3 GeV
- Good Particles 3 GeV

$P_{t} [GeV/c]$ Distribution at $z = 0.0$

- All Particles 8 GeV
- All Particles 3 GeV
- Good Particles 3 GeV

Hisham Sayed - BNL
Distribution at $z = 0.0$

Muon(Pion)/Proton Time [sec]

Distribution at $z = 0.0$

Pz [GeV/c] Time [nsec]
PHASE SPACE DEPENDENCE ON TAPER PROFILE FOR 8 GeV PROTON DRIVER
LONGITUDINAL PHASE SPACE DISTRIBUTIONS (SHORT VERSUS LONG TAPER)

End of taper

Long adiabatic taper 40 m

End of Decay

Short taper 4 m

Hisham Sayed - MAP meeting 2013
PHASE SPACE DISTRIBUTIONS (SHORT VERSUS LONG TAPER)

**t-Pz phase space at end of decay channel**

**Long Taper 40 m**

- More particles
- More dispersed (misses the buncher acceptance windows)

**Short Taper 4 m**

- Higher density t-Pz distribution
- Fits more particles within the acceptance of buncher/rotator

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Hisham Sayed - MAP meeting 2013
PHASE SPACE DEPENDENCE ON TAPER PROFILE

![Graph showing phase space dependence on taper profile]
Front End Performance

Using baseline cooling section
(140 cooling cell)

Using longer cooling section
(200 Cooling cell)

High statistics tracking of Muons through the front end