Corrector Cavity Location

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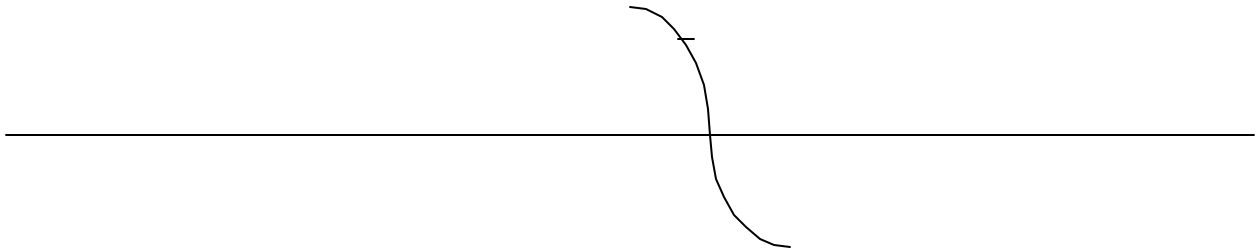
Possible location for the Corrector Cavity

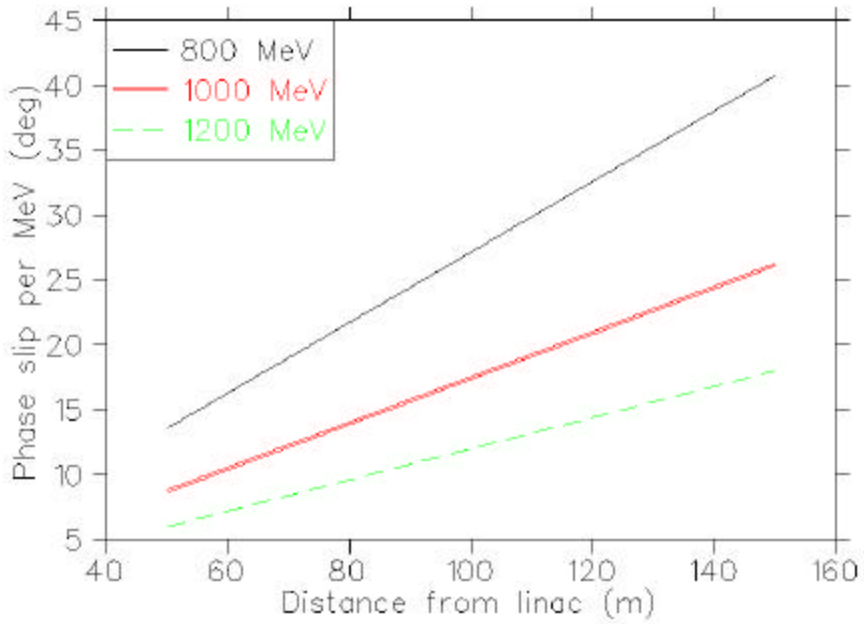
- After the Achromat (~ 154.5 meters)
- Before Achromat (~ 91.7 meters)
- At 32nd cryomodule (~ 40.8 meters)
- Phase slip is 0.2 deg/Mev/meter at 1 GeV

Corrector working



Phase Slips per MeV as function of Distance

$$\Delta f_L \equiv \frac{g}{g(g+1)} \frac{\Delta T}{T} \frac{L}{bc} 2pf$$



Required Voltage

- Distance between 26^{th} and 32^{nd} cryomodule is 40.8 metes
- V0=1.0/sin(8)=7.2 MV
- No energy error maximum phase error
  delE=7.2sin(2)=0.25 MeV
- energy error (1.0 MeV) + phase error (+-2 deg)
  (a) energy gain=7.2 sin(10)=1.25 MeV
  error =1.0-1.25 =0.25 MeV
  (b) energy gain =7.2 sin(6)= 0.75
  error 1.0 -0.75 =-0.25 MeV