Lattice Design of 20GeV/c Muon FFAG

(Reference Parameter)

FFAG WORKSHOP @ LBNL

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Constraints on Design

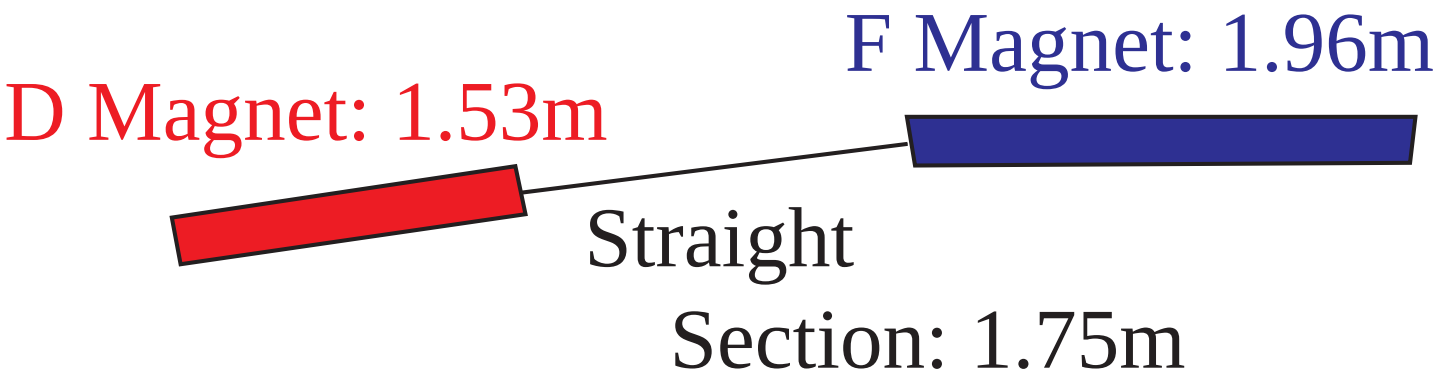
- Momentum Range: 10GeV/c to 20GeV/c
- Orbit Excursion: about 0.25m
- Vertical Beam Size: about 0.15m
  (300pmm-mrad.)
- Machine Radius: 200m(type1)/120m(type2)
- Max. B Field (on orbit): less than 6T/8T

Reference Parameter

Momentum Range(GeV/c)	10 to 20	10 to 20
Num. of Cell	180	120
k Value	670	330
Machine Radius(m)	200	120
Orbit Excursion(m)	0.206	0.251
Max. Beta Func.(m)	9.43(H)/21.4(V)	8.28(H)/21.3(V)
Max. Beam Size(mm)	106(H)/160(V)	99.7(H)/160(V)
Opening Angle(deg.)	0.562(F)/0.438(D)	0.87(F)/0.63(D)
Packing Factor	0.5	0.5
Max. B Field on Orbit(T)	5.86	7.73
Betatron Tune	41.3(H)/15.7(V)	28.1(H)/9.38(V)
Phase Adv. per Cell(deg.)	82.2(H)/31.4(V)	84.3(H)/28.1(V)
Revolution Frequancy(MHz)	0.24	0.4
RF Voltage (MV/m average)	0.75	0.75
RF Frequancy(MHz)	24	12－18
harmonic number	100	30-45
number of turn	15	20-30

Length of Elements

Type1 (radius: 200m, cell: 180)



Type2 (radius: 120m, cell: 120)