Comparison of beam lines

Criteria

A Angular Divergence at Secondary (Experimental)Target- For Beam Cerenkovs

B Angle between photons produced in momentum slit and secondary beam

C Cleanliness of beam on target (Defined as 5 cm diameter spot) Primary beam 1.e7 protons on target. Secondary beam 90Gev positives +/- 5%dp/p slit.

D Can one get momentum resolution better than the momentum slit acceptance (taken to be +/- 5%)?

E Space after momentum slit for shielding

F Element irradition issues

G Total length between primary and secondary targets (5 GeV/c Kaon has $\gamma\beta c\tau$ =37.6 meters)

Beam line Type	A	B	C	D	E	F	G
Carey I Normal Quad polarity	0.6mr	8mr	6573 on targ, 80%on momentum 2064 off targ =30% off/on	R33=0.19 R66=.32/1% spsz=1.7mm	90cm	ok	78m=2.1Kaon lengths at 5 GeV
Carey II Reverse quad polarity	0.6mr	8mr	4548 on Targ, 79% on momentum 720 off targ = 15% off/on	R33=5.83 R36=2.0mm/1% spsz=0.34mm	90cm	ok	78m
Carey III zero disp at target	0.5mr	8mr	3350 on targ, 90% on momentum 1583 off targ=47%off/on, With narrower x colimator, 875 off 26% off/on	Same as Carey II	191cm	ok	78m
Carol III	0.3 mr	12mr	4857 on target 89%on momentum 504 off target= 10%off/on	R33=0.36 R36=2.0mm/1% spsz=5.6mm	100cm	ok	98m=2.6 Kaon lengths at 5 GeV. 3.4 times fewer Kaons at 5 GeV than Carey I-III Kaon momentum 6.3 GeV will have same as 5 GeV in Carey I-III.