Update on SNAKE Matching Data

Min Huang

8/7/2013

Items tried	✓	
Coordinate	Transport coordinate system	
Center angle def	Center hole 5.785 deg	Survey
HRS offset		Survey
Extended septum field range		
Start from z_tr=0 plane		
Septum field		
Dipole field		epics
Q1		epics
Q2		epics
Q3		epics
BPM input		

Current Results

#2726
xbeam = -1.3mm
ybeam = 0.1mm

- Move septum/QQDQ by 1-2mm around

		Fp center hole		Sieve center hole	
Fp:		Y(mm)	Phi(mrad)	Y(mm)	Phi(mrad)
data		-0.9	0.5	-13.1	-6.2
SNAKE	start	1.8	-1.5		
	……				
SNAKE	Whole HRS -1mm, septum -2mm	1.6	-0.07	-10.1	-6.1
	Dipole 1.96mm	2.0	0.5	-9.8	-5.6

Uncertainty from First Order Matrix

	x0	theta0	y0	phi0	delta
x	-2.41E+00	-5.63E-02	-2.51E+00	-3.39E-01	-3.39E-01
Theta	-2.25E-01	-4.18E-01	-2.33E-01	3.80E-01	3.80E-01
Y	1.27E-02	-7.00E-03	-1.11E-01	-1.97E+00	
phi	-8.94E-03	6.01E-01	4.49E-01	-1.06E+00	

HRS with -1mm left offset, septum -2mm offset w.r.t. trajectory from C foil to sieve center

Uncertainty source	(mm)
Beamx	0.10
Beamy	0.11
Survey	0.5
Multiple scattering	Todo ~a few mr
Focal plane resolution	0.5 0.6mr

Next

- Plot all the other holes to see the distribution/acceptance – extended angles
- Run with ~5mm offset (March 14), tuning septum gives a different septum field (7%) -- extended target effect