Geom tolerances for SSS in Disp Sup
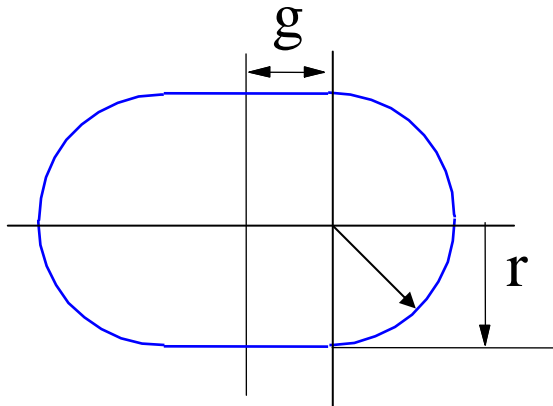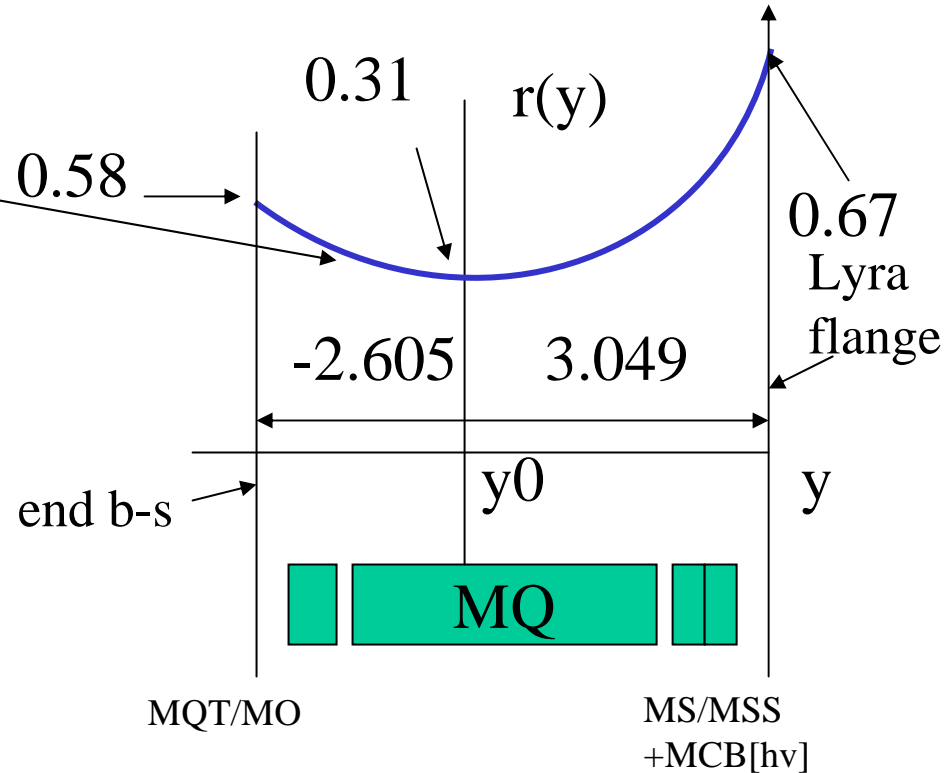
BJ , MEB 84? 10th Jun2 2005

SSS geom spec at WP18

- g = 0.53 mm
- r0 = 0.31 mm
- a0 = 3.92e-2 ,
- r(y) = r0 + a0 * (y-y0)^2

- y0 is the magnetic center of the MQ
- y0 at 3.049m from the lyra c.b. flange (no flange on the left side) -> use right side to relate y to y0
- Tolerance for the BPM support: 0.3mm (G. Schneider, K. Schirm)
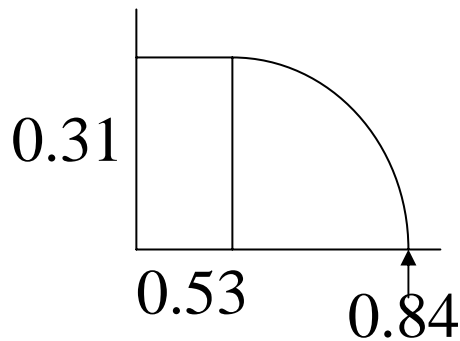- Drift-tube comes in at SMI2 → checked beyond WP18

0.31

r(y)

0.58

0.67
Lyra flange

-2.605   3.049

end b-s

y0   y

MQ

MQT/MO

MS/MSS +MCB[hv]

g

r

BJ, with SF + Ivar Waarum
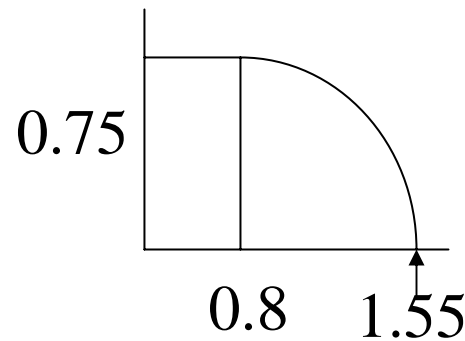MEB 71, 14th Feb 2005, upd. 17th March

Input material

- Adjust to primary aperture n1 = 7.0 as much as possible

- not 100% possible (some L3/R3 + 1 in L2)

- Adjust to be as good as with Golden MB's, excluding the few difficult cases (difficult for MB as well)
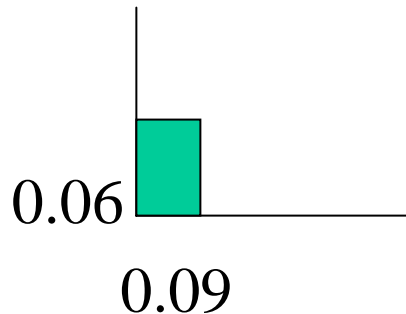
Straight WP08/18 Arc → DS

SSS-arc WP18

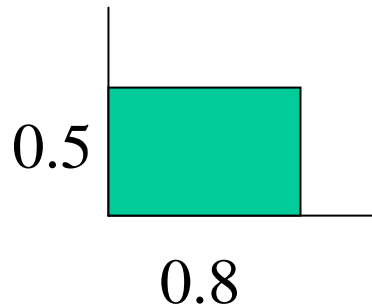MB-arc Silver WP08

0.31

0.75

0.53

0.84

0.8   1.55

Subtract dx = -0.75 dz = -0.25

0.06

0.5

0.09

0.8

Golden SSS

Golden MB

- A bit hard for Golden SSS

- → try more refined adjustment

Min aperture per disp.sup

Analysis further split
H vs. V
too long for slides

ARC	side	SSSdarc	SSSds	SpSSS	MB-ds
arc12	l1	6.783	6.789	6.689	6.838
arc12	r2	6.774	6.866	6.824	6.936
arc23	l2	6.728	6.822	**6.606-H 6.656-V**	
arc23	r3	6.763	6.564	6.621	6.692
arc34	l3	6.765	6.823	6.626	6.551
arc34	r4	6.770	6.867	6.754	6.915
arc45	l4	6.783	6.775	6.915	6.771
arc45	r5	6.791	6.881	6.791	6.975
arc56	l5	6.768	6.713	6.705	6.791
arc56	r6	6.795	6.908	6.815	6.965
arc67	l6	6.777	6.876	6.903	6.922
arc67	r7	6.787	6.792	6.803	6.757
arc78	l7	6.776	6.853	6.780	6.719
arc78	r8	6.774	6.819	6.809	6.852
arc81	l8	6.780	6.866	6.926	6.911
arc81	r1	6.735	6.800	6.756	6.943
Min_n1		6.728	6.564	6.606	6.551
no IR3		6.728	6.713	6.606	6.656
no IR3 no L2		6.735	**6.713**	6.689	**6.719**

Two bad guys in L2

IR3 better if mom-coll
present, otherwise easier
optics – more work needed

SpSSS : need update
Small error found
(will get better …)

← With h=0.1 v=0.15

Often more easy cases : adjust tol/slot

'Tolerance card' for SSS-ds

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        MQ.12R8
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With ref tol wp18-DS :   h   0.10   v   0.15 [mm]

ap	beam	beta_x	beta_y	D_x	D_y	n1
1	2	27	184	0.935	-0.067	6.819
2	1	180	30	1.996	0.016	7.735

With adj tol wp18 :   h   1.44   v   0.33 [mm]

ap	beam	beta_x	beta_y	D_x	D_y	n1
1	2	27	184	0.935	-0.067	6.708
2	1	180	30	1.996	0.016	6.942

Recommended upper limits: h   0.80   v   0.30 [mm]

Further work

- Refine the data (be closer to n1=7.0)
- Identify all the ds-SSS which are more difficult than arc-SSS.
- Same work for SpSSS

Asked J.Beauquis to add a window for adjustment
of g,r,alfa,h,v in the SSS-viewer
(and parabolas on x and z plots) – under work

Good point : the viewer will also allow to treat SpSSS
(counter-checks, …)