

Proposed V6.501 Optics

- **individual** aperture and tolerance values are now available for most elements
- optimization of the insertion optics to improve the **minimum N1** values

The **phase advances** across the IRs were chosen more than 5 years ago (Design Report)

Hardware changes since 2002:

- **tighter** mechanical apertures and tolerances
- **displacement** of some quads (Q6)
- **phase constraints** on injection collimator locations

V6.500**rematched optics****D F Q6F****D F Q6F**

Beam 1

IR1	6.73	6.93		6.71	7.00	
IR2	6.54	6.49	6.75	6.66	6.94	6.75
IR3	6.73	6.50	5.96	6.73	6.55	5.96
IR4	6.70	7.07				
IR5	6.58	6.89		6.68	6.94	
IR6	6.75	6.92				
IR7	6.52	6.80		6.65	7.19	
IR8	6.79	6.74	6.81	6.80	7.02	6.93

Beam 2

IR1	6.69	6.87		6.74	7.01	
IR2	6.63	6.90		6.72	6.93	
IR3	6.34	6.41	5.71	6.35	6.56	5.71
IR4	6.74	7.16				
IR5	6.74	7.06		6.70	6.97	
IR6	6.71	6.95				
IR7	6.62	7.15		6.80	7.15	
IR8	6.70	6.94		6.70	7.12	

Conclusions

- performance differences between two beams
- several IRs could be improved (mostly in beam 1)
- new phase advances IR2 and IR8 need yet to be confirmed in collision optics
- IR1/5 phase advances kept constant
- almost no improvement in (tuned) IR3