

# ATLAS Forward Detectors

## Beam Based Alignment

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- Alignment performed during the night of 3/4 April:  $\sqrt{s} = 13.6$  TeV,  $\beta^* = 1.2$  m,  $\theta_c = 160$   $\mu$ rad,  $\phi = 90$  (up), inverted polarity of inner triplet, TCL 4/5/6 in garage.
- Pot insertion strategy (reminder): pots kept at the same distance (in mm) during all  $\beta^*$  levelling steps; distance determined at  $\beta^* = 1.2$  m.
- Moments of beam touching:

hor. Element		L			R				nom beam size $\sigma$	n_scraping	
		2015	from TCP	measured	measured						
TCP.C6L7.B1				1.435					-1.080	0.260	4.84
XRPH.B6R1.B1	FAR	1.039	0.537	1.160	N/A	N/A	N/A	N/A	N/A	0.111	4.79
TCP.C6L7.B1				1.405					-1.060	0.260	4.74
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XRPH.A6R1.B1	NEAR	0.863	0.616	1.752	N/A	N/A	N/A	N/A	N/A	0.130	4.68
TCP.C6L7.B1				1.380					-1.035	0.260	4.64

hor. Element		L			R				nom beam size $1 \sigma$ [mm]	n_scraping	
		2015	from TCP	measured	measured						
TCP.C6R7.B2				1.415					-0.790	0.260	4.24
XRPH.B6L1.B2	FAR	0.682	0.471	1.510	N/A	N/A	N/A	N/A	N/A	0.111	4.15
TCP.C6R7.B2				1.350					-0.785	0.260	4.07
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XRPH.A6L1.B2	NEAR	1.719	0.529	1.305	N/A	N/A	N/A	N/A	N/A	0.130	4.01
TCP.C6R7.B2				1.330					-0.730	0.260	3.96

- Pot-beam distance accordingly to  $\text{MAX}[(9.35 + 3)\sigma + 0.3\text{mm}; 1.5 \text{ mm}]$  rule:
  - XRPH.B6L1.B2 (A FAR): 2.713 mm,
  - XRPH.A6L1.B2 (A NEAR): 2.689 mm,
  - XRPH.A6R1.B1 (C NEAR): 3.047 mm,
  - XRPH.A6R1.B1 (C FAR): 2.296 mm,
- Corresponding LVDT positions:
  - XRPH.B6L1.B2 (A FAR): 2.614 mm,
  - XRPH.A6L1.B2 (A NEAR): 2.687 mm,
  - XRPH.A6R1.B1 (C NEAR): 2.926 mm,
  - XRPH.A6R1.B1 (C FAR): 2.199 mm.
- From the first glance no obvious issues spotted during Loss Maps.
- No issues with pot movement observed during BBA nor LMs.