



TOTEM Roman Pots exposure to MKD misfire - update with ATS optics for 2017

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Phase advances from MKD to RPs

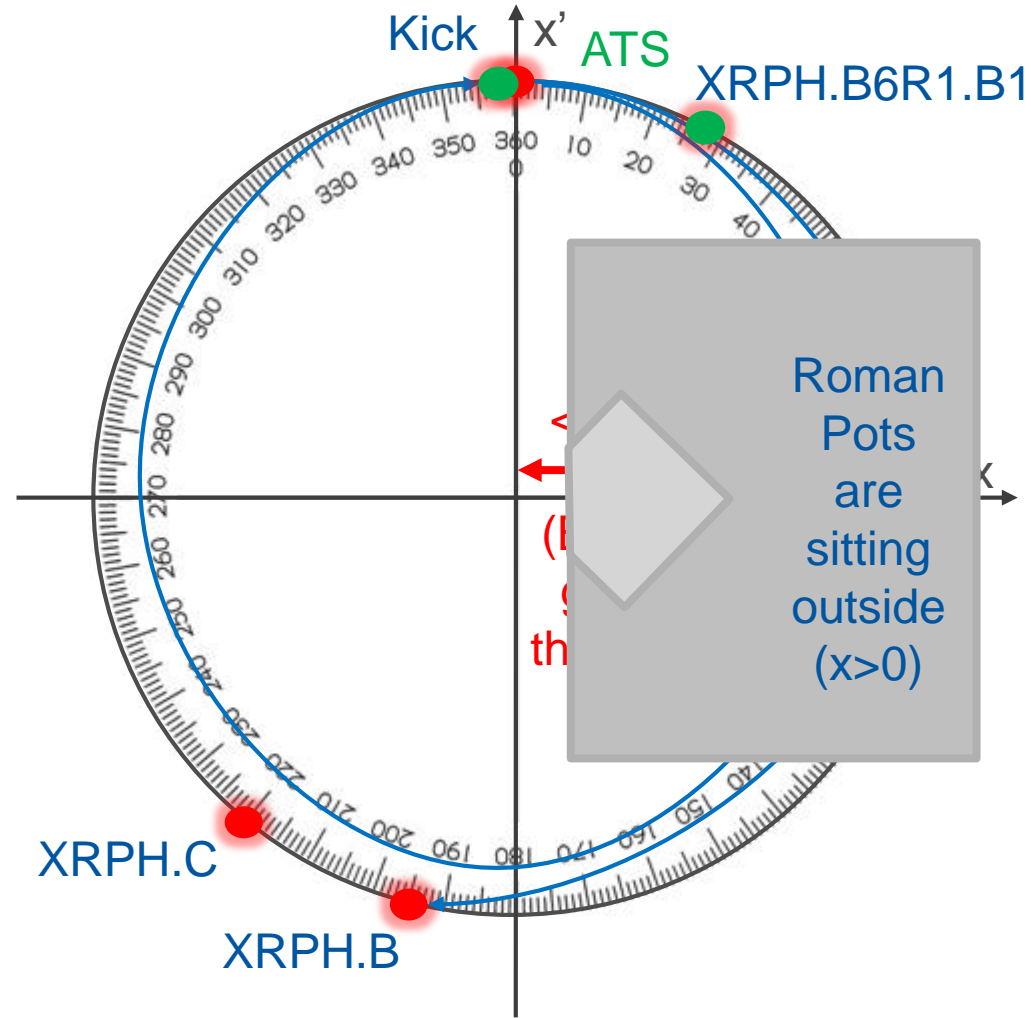
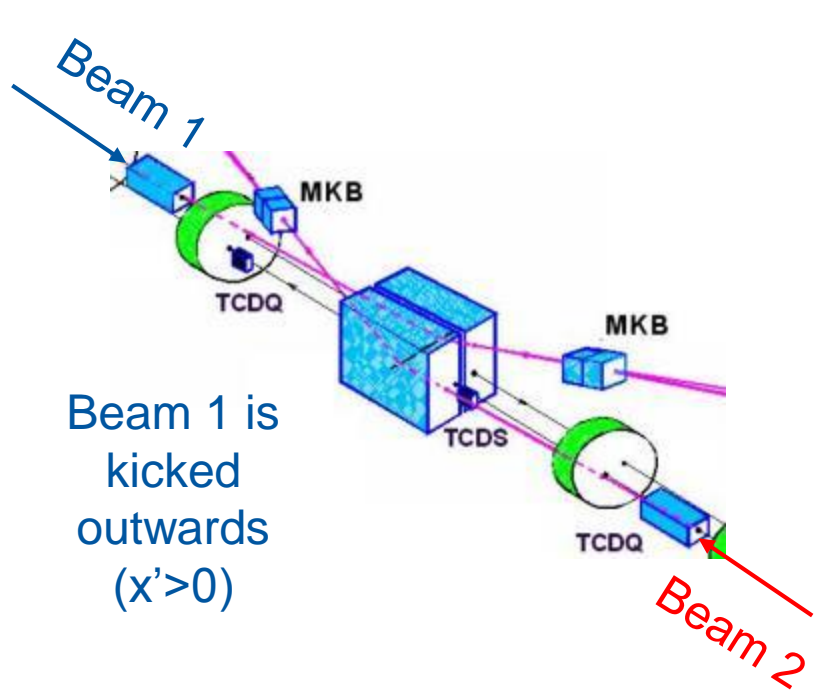
- From MKD H; add +/- 2 degrees for MKD.A/O

RP	2016 optics	ATS 40 cm	ATS 33 cm	RP	2016 optics	ATS 40 cm	ATS 33 cm
B1		IP5		B2		IP5	
XRPH.C6R5.B1	-168.9	1.7	-2.7	XRPH.B6L5.B2	45.8	8.6	4.8
XRPH.D6R5.B1	-160.6	8.9	3.4	XRPH.E6L5.B2	34.6	0.2	-2.7
XRPH.A6R5.B1	-156.5	12.4	6.4	XRPH.A6L5.B2	33.2	-0.8	-3.6
XRPH.E6R5.B1	-155.3	13.4	7.3	XRPH.D6L5.B2	28.5	-4.4	-6.7
XRPH.B6R5.B1	-145.3	21.6	14.6	XRPH.C6L5.B2	19	-11.8	-13
		IP1				IP1	
XRPH.A6R1.B1	-159.5	10.9	11.4	XRPH.B6L1.B2*	36.5	24.6	23
XRPH.B6R1.B1	-143.3	24.8	23.4	XRPH.A6L1.B2*	26	10.7	14.1

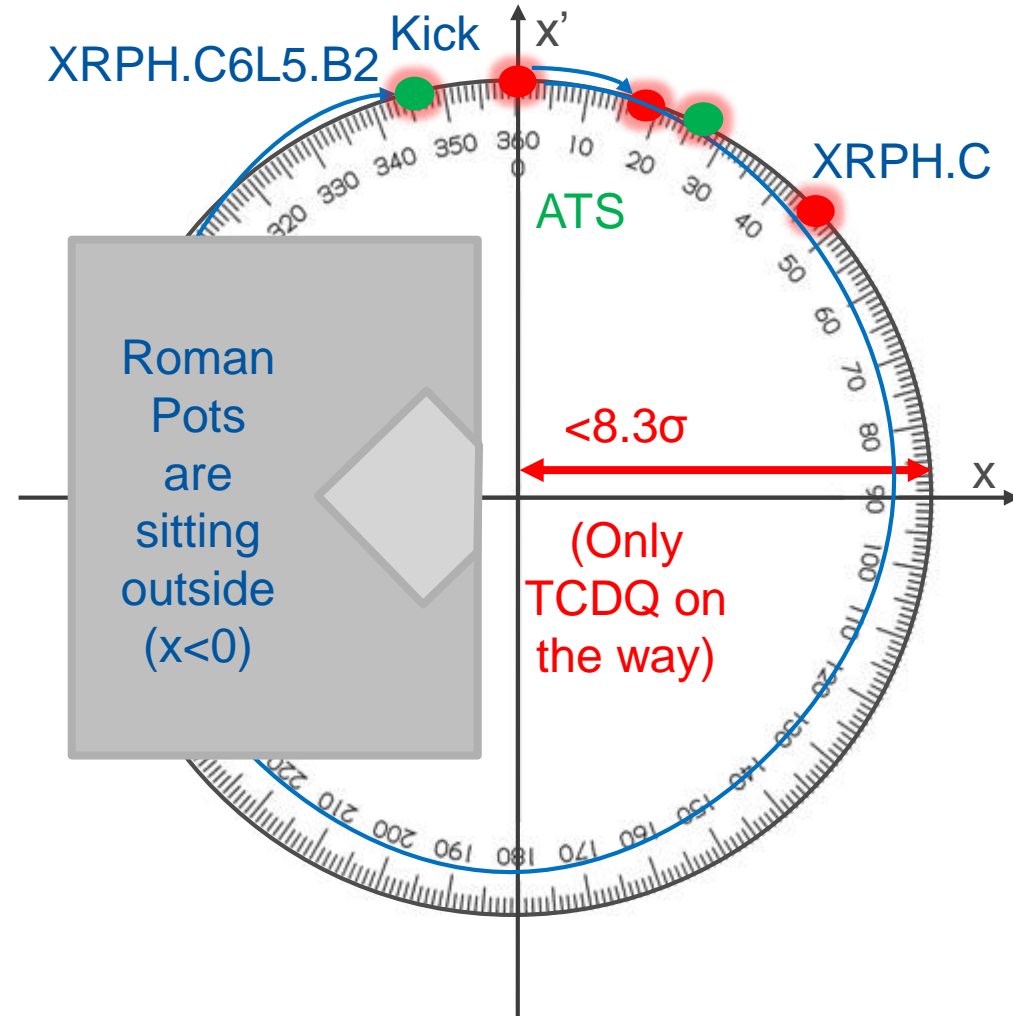
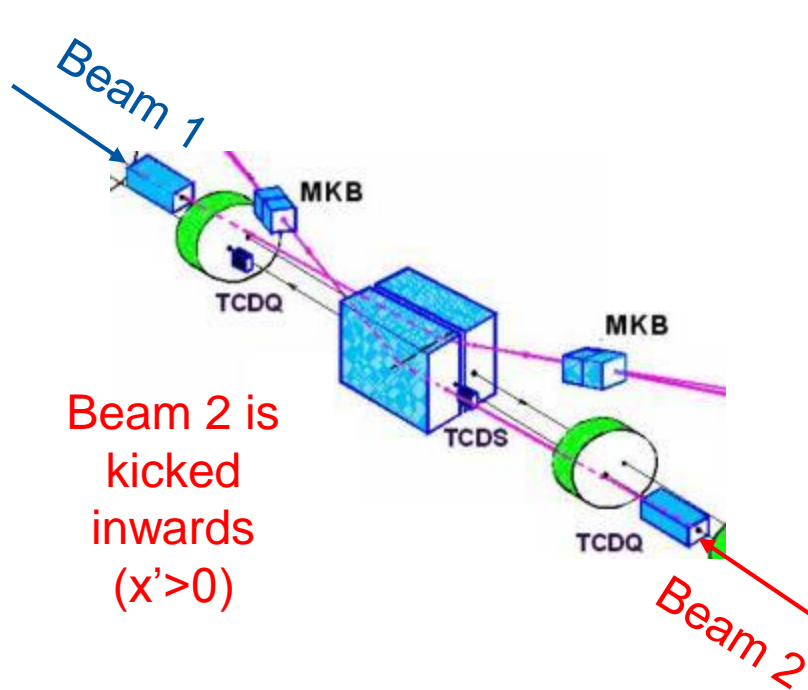
From [/afs/cern.ch/user/s/sfar/public/newATS/forXRP/opticsfile.19_new](https://afs.cern.ch/user/s/sfar/public/newATS/forXRP/opticsfile.19_new)

*: not in the model yet, ph-adv was assumed to be similar as for B1 from TCL6

Beam 1 betatron motion



Beam 2 betatron motion



Summary

- With ATS optics some Roman Pots of Totem and AFP are on the side of the beam where the beam is kicked by the MKDs.
- For 40 cm:

RP.B6R5.B1	23.6	degrees
RP.B6R1.B1	26.8	degrees
RP.C6L5.B2	13.8	degrees
- For 33 cm:

RP.B6R5.B1	16.6	degrees
RP.B6R1.B1	25.4	degrees
RP.C6L5.B2	15	degrees
- The phase advances are all below 27 degrees ($\sin(30^\circ)=0.45$).



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