



# Loss map validation after TS1

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- Loss map matrix: 2018 normal operation optics**
  
- Loss map matrix: VdM optics**
  
- Loss map matrix: 90 m  $\beta^*$  optics**



# Loss map matrix: 2018 normal operation optics



	450 GeV		Ramp & Sq	6.5 TeV							
	Inj. Prot. IN	Inj. Prot. OUT		FT	Sq. Cont.	End Sq.	Physics (XRP-OUT) $\beta^*=30$ cm xing 160 urad	Physics (XRP-IN) $\beta^*=30$ cm xing 160 urad	Physics (XRP-IN) $\beta^*=30$ cm xing 130 urad	Physics (XRP-IN) $\beta^*=27$ cm xing 130 urad	Physics (XRP-IN) $\beta^*=25$ cm xing 130 urad
B1H	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
B1V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
B2H	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
B2V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
+ $\delta p$	✓	—	—	✓	—	—	—	—	—	—	✓
- $\delta p$	✓	—	—	—	—	—	—	✓	—	—	—
ASD	✓	—	—	—	—	—	—	✓	—	—	✓

+ All betatron from 160 urad to 130 urad in steps of 10 urad ✓

— = not requested  
 ✓ = to be done  
 ✓ = validated

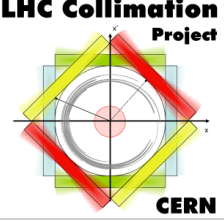
	450 GeV		Ramp & Sq	6.5 TeV	
	Inj. Prot. IN	Inj. Prot. OUT		FT	Physics
B1H	✓	✓	—	✓	✓
B1V	✓	✓	—	✓	✓
B2H	✓	✓	—	✓	✓
B2V	✓	✓	—	✓	✓
+ $\delta p$	✓	—	—	—	✓
- $\delta p$	✓	—	—	—	✓
ASD	✓	—	—	✓	✓

— = not requested  
 ✓ = to be done  
 ✓ = validated

# Loss map matrix: 90 m $\beta^*$ optics

	450 GeV		Ramp & Sq	6.5 TeV			
	Inj. Prot. IN	Inj. Prot. OUT		FT	Dsq. Cont.	End Dsq.	Physics
B1H	—	—	—	✓	—	✓	✓
B1V	—	—	—	✓	—	✓	✓
B2H	—	—	—	✓	—	✓	✓
B2V	—	—	—	✓	—	✓	✓
+ $\delta p$	—	—	—	✓	—	—	✓
- $\delta p$	—	—	—	✓	—	—	✓
ASD	—	—	—	✓	—	✓	✓

— = not requested  
 ✓ = to be done  
 ✓ = validated



**Thank you!**