



First feedback from 2024 Pb loss maps

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Ad-hoc BLM Thresholds Meeting (Pb run 2024)
29/10/2024

Outline

1. 2023 IR7 collimators thresholds strategy
2. 2023 IR7 collimator families
3. Comparison 2023 and 2024 factors (collimation/cold magnets/Q6)
4. Other BLMs limiting
5. Things to do

2023 families for collimation

Strategy for collimators in IR7:

- Provide redundant protection for both channeling and amorphous simultaneously
 - At injection and top energy -> different corrections, step function changing at 2 TeV
- At least 2 monitors per beam that cover in combination H and V for channeling
 - Channeling set at around 50kW
- 1 monitor per beam and plane for amorphous
 - Amorphous set at around 15kW
- Volume reflection was not considered last year
- Described in LHC-BLM-ECR-0079

2023 families for collimation

Family	BLM	Factor 6.8 TeV	Factor 450 GeV	kW master channelling	kW master amorphous	kW master standard
Crystal in Channeling 4.75 sigma						
THRI_COLL_7_TCLA_LO_ION ** need but is at noise levels (only top energy)	BLMTI.06L7.B2I10_TCLA.D6L7.B2	2.5	0.133	+100 (17)	14 (+100)	+100
	BLMTI.06R7.B1E10_TCLA.D6R7.B1			+100 (+100)	14 (27)	+100
THRI_COLL_7_TCSPM_LO_ION_H_CH	BLMTI.04L7.B1E10_TCSPM.B4L7.B1	2.4	1.55	51 (21)	+100	+100
	BLMTI.04R7.B2I10_TCSPM.B4R7.B2			50 (45)	+100	+100
THRI_COLL_7_TCSPM_LO_ION_V_CH	BLMTI.04L7.B1E10_TCSG.D4L7.B1	0.45	1.55	50 (100)	+100	+100
	BLMTI.04R7.B2I10_TCSG.D4R7.B2			52 (51)	+100	+100
THRI_COLL_7_TCSG_LO_ION_H_CH	BLMTI.04L7.B1E10_TCSG.B4L7.B1	1.6	1.6	200 (26)	+100	+100
	BLMTI.04L7.B1E10_TCSG.A4L7.B1			50 (58)	+100	+100
	BLMTI.04R7.B1E10_TCSG.A4R7.B1			58 (184)	+100	+100
	BLMTI.04R7.B2I10_TCSG.A4R7.B2			50 (109)	+100	+100
THRI_COLL_7_TCSG_ME_ION_V_CH	BLMTI.05L7.B1E10_TCSG.A5L7.B1	0.5	0.023	57 (53)	+100	100
	BLMTI.05R7.B2I10_TCSG.A5R7.B2			50 (139)	+100	80
Crystal in Amorphous 4.75 sigma						
THRI_COLL_7_TCSG_ME_ION_V_AM	BLMTI.06L7.B2I10_TCSG.6L7.B2	0.005	0.12		31	
	BLMTI.06R7.B1E10_TCSG.6R7.B1				13	
THRI_COLL_7_TCSPM_LO_ION_H_AM	BLMTI.05L7.B2I10_TCSG.E5L7.B2	0.025	0.02	47 (54)	20	+100
	BLMTI.05R7.B1E10_TCSG.E5R7.B1			58 (337)	27	90
For the standard case we don't need to revert to proton families, just to move the monitors to these ones						
THRI_COLL_7_TCSG_ME_ION_H_STD	BLMTI.06L7.B2I10_TCSG.6L7.B2	0.05	0.05	-	-	24
	BLMTI.06R7.B1E10_TCSG.6R7.B1			-	-	31
THRI_COLL_7_TCSG_ME_ION_V_STD	BLMTI.05L7.B1E10_TCSG.A5L7.B1	0.13	0.13	-	-	26
	BLMTI.05R7.B2I10_TCSG.A5R7.B2			-	-	24

2023 families for collimation

	Duration	Master thresholds Pb ions	Applied thresholds MF = 0.4	Applied thresholds MF = 0.6	Applied thresholds MF = 0.8
RS08-RS10	0.655 – 5.24 s	50 kW	20 kW	30 kW	40 kW
RS11	20.97 s	24 kW	9.6 kW	14.4 kW	19.2 kW
RS12	83.89 s	10 kW	4 kW	6 kW	8 kW

2023 Pb ion thresholds strategy

Running Sum	Time Scale	Maximum Values	Max. Nb. Protons at 7 TeV	Max. Nb. Protons at 450 GeV
RS01 – RS06	40 μ s – 0.01 s	125 kJ	1.1×10^{11} p	17.3×10^{11} p
RS07	0.08 s	500 kJ	4.5×10^{11} p	69.3×10^{11} p
RS08	0.6 s	500 kJ (833 kW)	4.5×10^{11} p	69.3×10^{11} p
RS09	1.3 s	500 kW	5.8×10^{11} p	90.2×10^{11} p
RS10	5.2 s	500 kW	23.2×10^{11} p	360.6×10^{11} p
RS11	20.9 s	5000 kJ	44.6×10^{11} p	693.6×10^{11} p
RS12	83 s	100 kW	74.0×10^{11} p	1151.3×10^{11} p

Collimator specifications reviewed during LS2... should we follow a similar strategy for the RS but scaling to 60 kW (CH) or 15kW (AM/VR) in RS09/RS10?

200kW this year

2024 families for collimation

RS	Duration	kW channeling	kW amorphous/VR?
RS01	40 us	375000	93750
RS02	80 us	187500	46875
RS03	320 us	46875	11719
RS04	640 us	23438	5859
RS05	2.56 ms	5859	1465
RS06	10.24 ms	1465	366
RS07	81.92 ms	732	183
RS08	655 ms	91	23
RS09	1.3 s	60	15
RS10	5.2 s	60	15
RS11	21 s	29	7
RS12	84 s	24	6

Recovered the master thresholds for the ion families of last year

Calculated BLM responses (Gy/charge) from the loss maps in CH, AM, VR from 28/10/2024 -> best ones so far, but in some cases peak power loss still low -> will introduce errors in response

Can we use the same families from last year?
Do we need to modify them?

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2023 families for collimation



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BLM_NAME	BLM_DCUM	IS_CONNECTED_TO_BIS	FAMILY_NAME	MASTER_THRES_RS09	APPLIED_NXCALS_RS09	RS09_TARGET_Gys	LOSSMAP_LIMIT	POWER_LOSS_TARGET	RATIO_MASTER_LSA	MASTER_LSA_KW
BLMTI.06R7.B1E10_TCLA.D6R7.B1	20215.360000	True	THRI_COLL_7_TCLA_LO_ION	0.079462	0.079462	0.108470	Lossmap_VR-B1H-Sep23	15.000000	1.365056	10.988561
BLMTI.06L7.B2I10_TCLA.D6L7.B2	19772.960000	True	THRI_COLL_7_TCLA_LO_ION	0.079462	0.079462	0.071347	Lossmap_AM-B2H-Sep23	15.000000	0.897879	16.706042

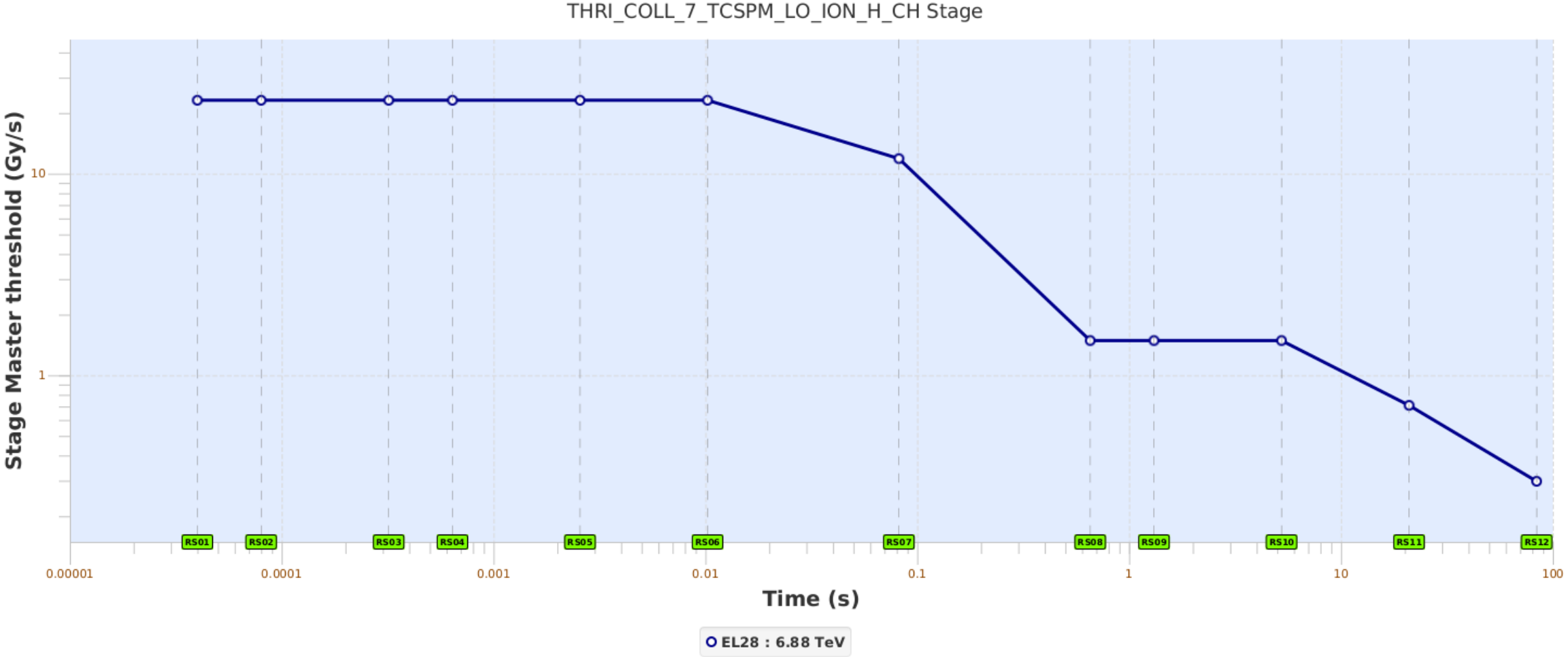
2024

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BLMTI.06R7.B1E10_TCLA.D6R7.B1	20215.360000	True	THRI_COLL_7_TCLA_LO_ION	0.079462	0.079462	0.078582	Lossmap_AM-B1H-Oct24-3	15.000000	0.988927	15.167961
BLMTI.06L7.B2I10_TCLA.D6L7.B2	19772.960000	True	THRI_COLL_7_TCLA_LO_ION	0.079462	0.079462	0.055143	Lossmap_AM-B2H-Oct24-3	15.000000	0.693953	21.615308

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BLMTI.04L7.B1E10_TCSPM.B4L7.B1	19990.290000	True	THRI_COLL_7_TCSPM_LO_ION_H_CH	1.486935	1.040855	1.836364	Lossmap_CH-B1H-Sep23	60.000000	1.234999	48.583024
BLMTI.04R7.B2I10_TCSPM.B4R7.B2	20002.030000	True	THRI_COLL_7_TCSPM_LO_ION_H_CH	1.486935	1.486935	1.567764	Lossmap_CH-B2H-Sep23	60.000000	1.054360	56.906586

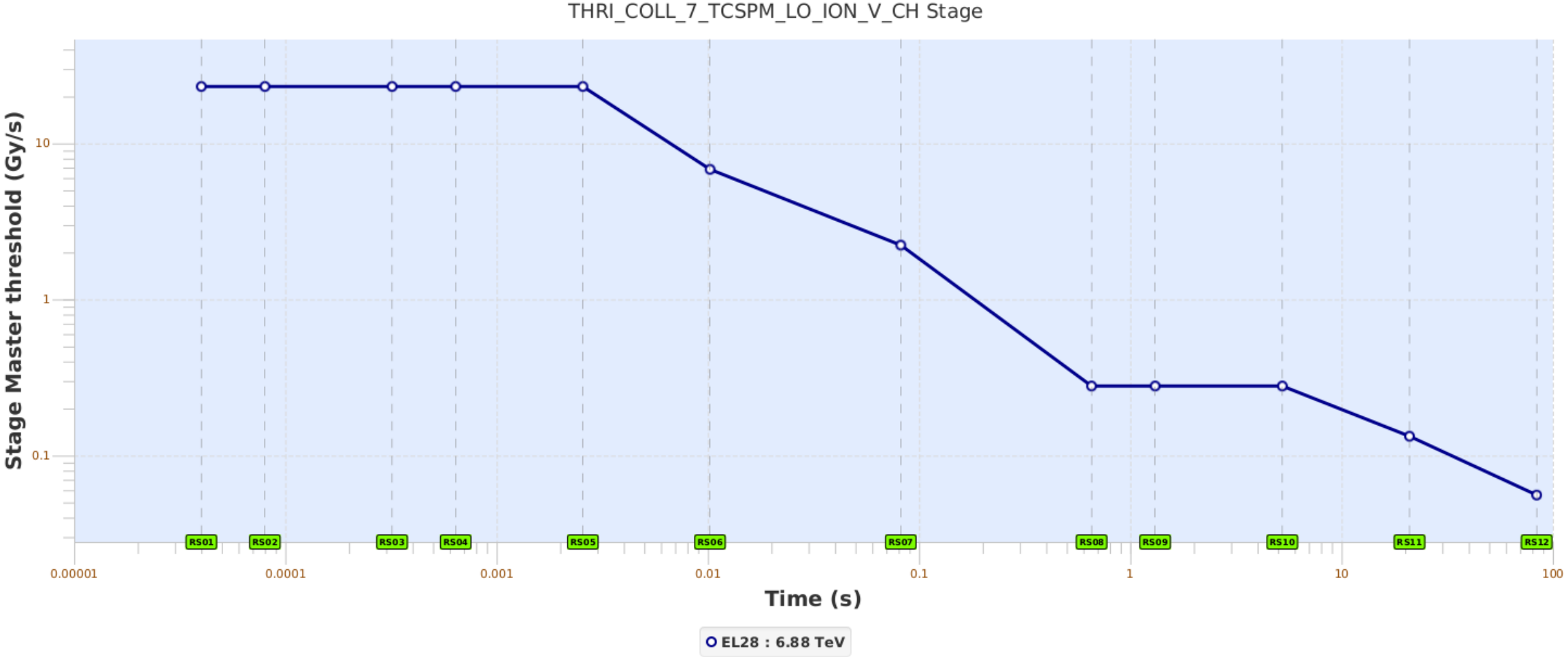
2024

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BLMTI.04L7.B1E10_TCSPM.B4L7.B1	19990.290000	True	THRI_COLL_7_TCSPM_LO_ION_H_CH	1.486935	1.040855	1.754996	Lossmap_CH-B1H-Oct24-3	60.000000	1.180277	50.835506
BLMTI.04R7.B2I10_TCSPM.B4R7.B2	20002.030000	True	THRI_COLL_7_TCSPM_LO_ION_H_CH	1.486935	1.486935	1.487806	Lossmap_CH-B2H-Oct24-3	60.000000	1.000586	59.964860

2023 families for collimation

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BLMTI.04R7.B2I10_TCSG.D4R7.B2	20070.220000	True	THRI_COLL_7_TCSPM_LO_ION_V_CH	0.278805	0.278805	0.288135	Lossmap_CH-B2V-Sep23	60.000000	1.033464	58.057172

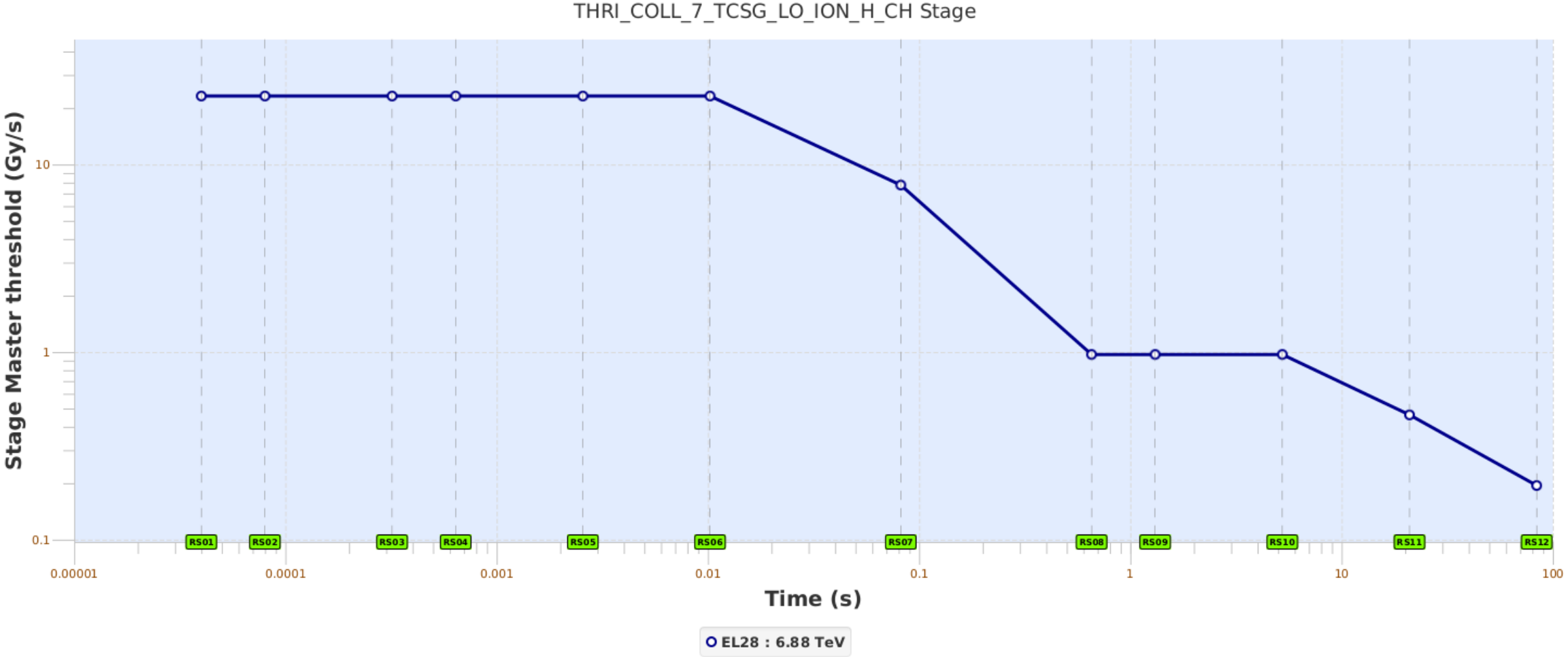
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BLMTI.04R7.B2I10_TCSG.D4R7.B2	20070.220000	True	THRI_COLL_7_TCSPM_LO_ION_V_CH	0.278805	0.278805	0.423268	Lossmap_CH-B2V-Oct24-3	60.000000	1.518151	39.521760
BLMTI.04L7.B1E10_TCSG.D4L7.B1	19918.370000	True	THRI_COLL_7_TCSPM_LO_ION_V_CH	0.278805	0.195163	0.338284	Lossmap_CH-B1V-Oct24-3	60.000000	1.213336	49.450442

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	BLMTI.05R7.B1E10_TCSG.E5R7.B1			58 (337)	27	90
For the standard case we don't need to revert to proton families, just to move the monitors to these ones						
THRI_COLL_7_TCSG_ME_ION_H_STD	BLMTI.06L7.B2I10_TCSG.6L7.B2	0.05	0.05	-	-	24
	BLMTI.06R7.B1E10_TCSG.6R7.B1			-	-	31
THRI_COLL_7_TCSG_ME_ION_V_STD	BLMTI.05L7.B1E10_TCSG.A5L7.B1	0.13	0.13	-	-	26
	BLMTI.05R7.B2I10_TCSG.A5R7.B2			-	-	24

2023 families for collimation



2023 families for collimation

2023

BLM_NAME	BLM_DCUM	IS_CONNECTED_TO_BIS	FAMILY_NAME	MASTER_THRES_RS09	APPLIED_NXCALS_RS09	RS09_TARGET_Gys	LOSSMAP_LIMIT	POWER_LOSS_TARGET	RATIO_MASTER_LSA	MASTER_LSA_KW
BLMTI.04L7.B1E10_TCSG.A4L7.B1	19992.030000	True	THRI_COLL_7_TCSG_LO_ION_H_CH	0.971071	0.971071	1.234192	Lossmap_CH-B1H-Sep23	60.000000	1.270960	47.208404
BLMTI.04R7.B2I10_TCSG.A4R7.B2	20000.030000	True	THRI_COLL_7_TCSG_LO_ION_H_CH	0.971071	0.971071	0.942080	Lossmap_CH-B2H-Sep23	60.000000	0.970145	61.846403
BLMTI.04L7.B1E10_TCSG.B4L7.B1	19988.030000	True	THRI_COLL_7_TCSG_LO_ION_H_CH	0.971071	0.971071	0.922754	Lossmap_CH-B1H-Sep23	60.000000	0.950244	63.141696
BLMTI.04R7.B1E10_TCSG.A4R7.B1	19996.290000	True	THRI_COLL_7_TCSG_LO_ION_H_CH	0.971071	0.971071	0.636616	Lossmap_CH-B2H-Sep23	60.000000	0.655582	91.521758

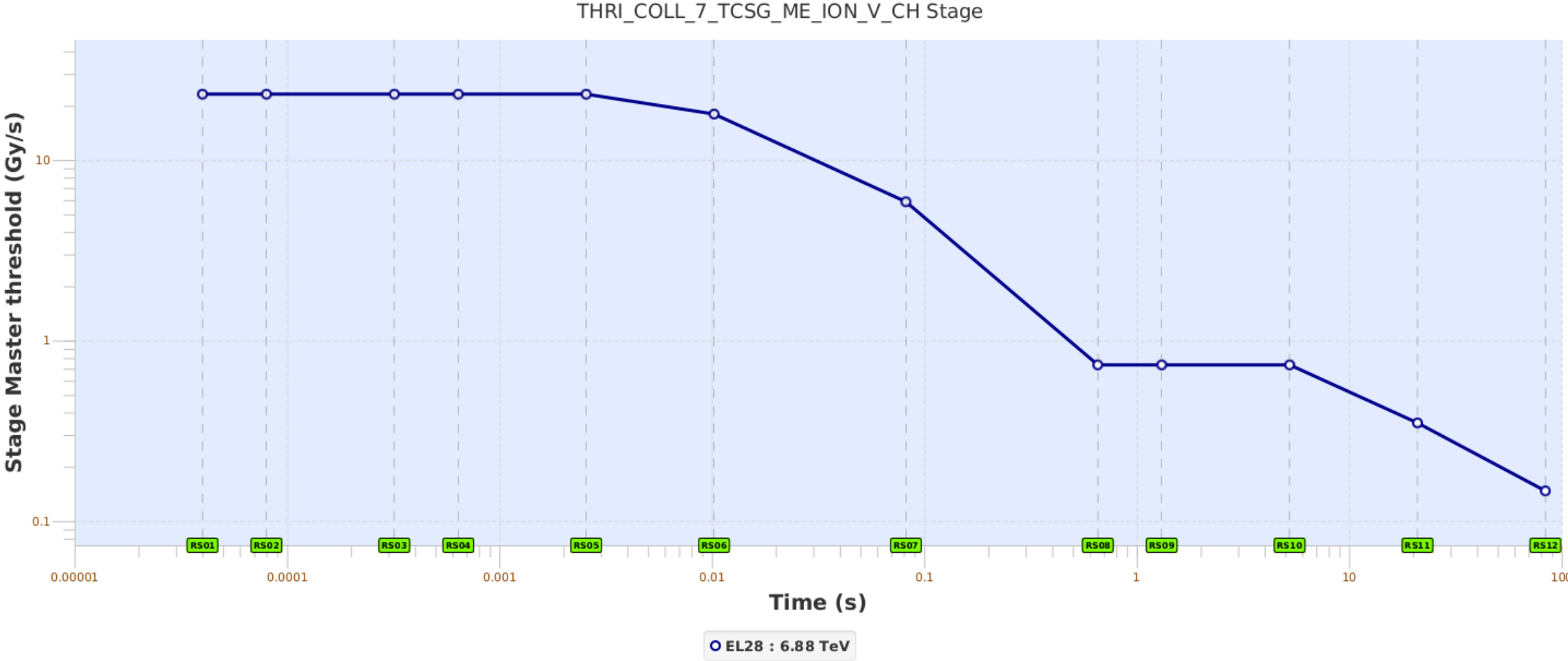
2024

BLM_NAME	BLM_DCUM	IS_CONNECTED_TO_BIS	FAMILY_NAME	MASTER_THRES_RS09	APPLIED_NXCALS_RS09	RS09_TARGET_Gys	LOSSMAP_LIMIT	POWER_LOSS_TARGET	RATIO_MASTER_LSA	MASTER_LSA_KW
BLMTI.04L7.B1E10_TCSG.A4L7.B1	19992.030000	True	THRI_COLL_7_TCSG_LO_ION_H_CH	0.971071	0.971071	1.145937	Lossmap_CH-B1H-Oct24-3	60.000000	1.180076	50.844164
BLMTI.04L7.B1E10_TCSG.B4L7.B1	19988.030000	True	THRI_COLL_7_TCSG_LO_ION_H_CH	0.971071	0.971071	0.874037	Lossmap_CH-B1H-Oct24-3	60.000000	0.900076	66.661025
BLMTI.04R7.B2I10_TCSG.A4R7.B2	20000.030000	True	THRI_COLL_7_TCSG_LO_ION_H_CH	0.971071	0.971071	0.863592	Lossmap_CH-B2H-Oct24-3	60.000000	0.889319	67.467345
BLMTI.04R7.B1E10_TCSG.A4R7.B1	19996.290000	True	THRI_COLL_7_TCSG_LO_ION_H_CH	0.971071	0.971071	0.552293	Lossmap_CH-B2H-Oct24-3	60.000000	0.568747	105.495132

2023 families for collimation

Family	BLM	Factor 6.8 TeV	Factor 450 GeV	kW master channelling	kW master amorphous	kW master standard
Crystal in Channeling 4.75 sigma						
THRI_COLL_7_TCLA_LO_ION ** need but is at noise levels (only top energy)	BLMTI.06L7.B2I10_TCLA.D6L7.B2	2.5	0.133	+100 (17)	14 (+100)	+100
	BLMTI.06R7.B1E10_TCLA.D6R7.B1			+100 (+100)	14 (27)	+100
THRI_COLL_7_TCSPM_LO_ION_H_CH	BLMTI.04L7.B1E10_TCSPM.B4L7.B1	2.4	1.55	51 (21)	+100	+100
	BLMTI.04R7.B2I10_TCSPM.B4R7.B2			50 (45)	+100	+100
THRI_COLL_7_TCSPM_LO_ION_V_CH	BLMTI.04L7.B1E10_TCSG.D4L7.B1	0.45	1.55	50 (100)	+100	+100
	BLMTI.04R7.B2I10_TCSG.D4R7.B2			52 (51)	+100	+100
THRI_COLL_7_TCSG_LO_ION_H_CH	BLMTI.04L7.B1E10_TCSG.B4L7.B1	1.6	1.6	200 (26)	+100	+100
	BLMTI.04L7.B1E10_TCSG.A4L7.B1			50 (58)	+100	+100
	BLMTI.04R7.B1E10_TCSG.A4R7.B1			58 (184)	+100	+100
	BLMTI.04R7.B2I10_TCSG.A4R7.B2			50 (109)	+100	+100
THRI_COLL_7_TCSG_ME_ION_V_CH	BLMTI.05L7.B1E10_TCSG.A5L7.B1	0.5	0.023	57 (53)	+100	100
	BLMTI.05R7.B2I10_TCSG.A5R7.B2			50 (139)	+100	80
Crystal in Amorphous 4.75 sigma						
THRI_COLL_7_TCSG_ME_ION_V_AM	BLMTI.06L7.B2I10_TCSG.6L7.B2	0.005	0.12		31	
	BLMTI.06R7.B1E10_TCSG.6R7.B1				13	
THRI_COLL_7_TCSPM_LO_ION_H_AM	BLMTI.05L7.B2I10_TCSG.E5L7.B2	0.025	0.02	47 (54)	20	+100
	BLMTI.05R7.B1E10_TCSG.E5R7.B1			58 (337)	27	90
For the standard case we don't need to revert to proton families, just to move the monitors to these ones						
THRI_COLL_7_TCSG_ME_ION_H_STD	BLMTI.06L7.B2I10_TCSG.6L7.B2	0.05	0.05	-	-	24
	BLMTI.06R7.B1E10_TCSG.6R7.B1			-	-	31
THRI_COLL_7_TCSG_ME_ION_V_STD	BLMTI.05L7.B1E10_TCSG.A5L7.B1	0.13	0.13	-	-	26
	BLMTI.05R7.B2I10_TCSG.A5R7.B2			-	-	24

2023 families for collimation



2023 families for collimation

2023

BLM_NAME	BLM_DCUM	IS_CONNECTED_TO_BIS	FAMILY_NAME	MASTER_THRES_RS09	APPLIED_NXCALS_RS09	RS09_TARGET_Gys	LOSSMAP_LIMIT	POWER_LOSS_TARGET	RATIO_MASTER_LSA	MASTER_LSA_KW
BLMTI.05L7.B1E10_TCSG.A5L7.B1	19897.040000	True	THRI_COLL_7_TCSG_ME_ION_V_CH	0.734366	0.734366	0.822372	Lossmap_CH-B1V-Sep23	60.000000	1.119839	53.579137
BLMTI.05R7.B2I10_TCSG.A5R7.B2	20091.290000	True	THRI_COLL_7_TCSG_ME_ION_V_CH	0.734366	0.734366	0.777159	Lossmap_CH-B2V-Sep23	60.000000	1.058272	56.696224

2024

BLM_NAME	BLM_DCUM	IS_CONNECTED_TO_BIS	FAMILY_NAME	MASTER_THRES_RS09	APPLIED_NXCALS_RS09	RS09_TARGET_Gys	LOSSMAP_LIMIT	POWER_LOSS_TARGET	RATIO_MASTER_LSA	MASTER_LSA_KW
BLMTI.05L7.B1E10_TCSG.A5L7.B1	19897.040000	True	THRI_COLL_7_TCSG_ME_ION_V_CH	0.734366	0.734366	0.792649	Lossmap_CH-B1V-Oct24-3	60.000000	1.079364	55.588272
BLMTI.05R7.B2I10_TCSG.A5R7.B2	20091.290000	True	THRI_COLL_7_TCSG_ME_ION_V_CH	0.734366	0.734366	0.753590	Lossmap_CH-B2V-Oct24-3	60.000000	1.026177	58.469454

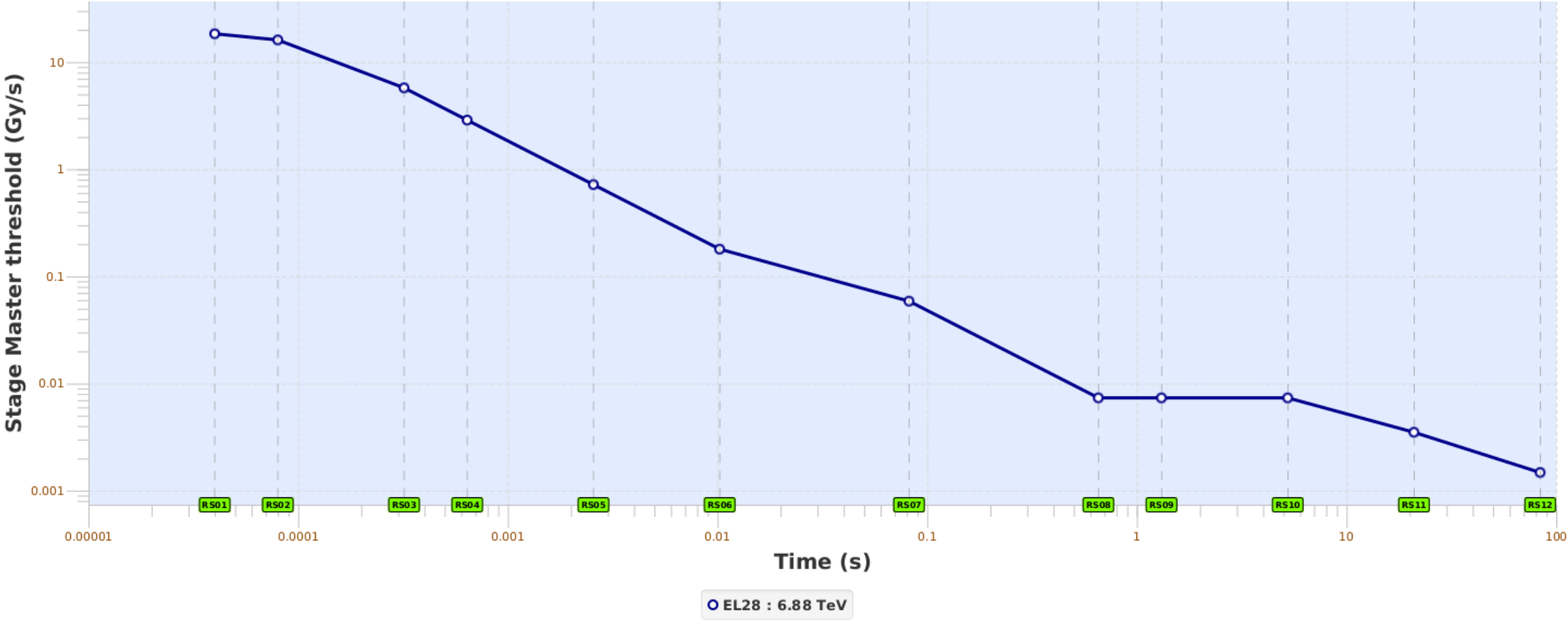


2023 families for collimation

Family	BLM	Factor 6.8 TeV	Factor 450 GeV	kW master channelling	kW master amorphous	kW master standard
Crystal in Channeling 4.75 sigma						
THRI_COLL_7_TCLA_LO_ION ** need but is at noise levels (only top energy)	BLMTI.06L7.B2I10_TCLA.D6L7.B2	2.5	0.133	+100 (17)	14 (+100)	+100
	BLMTI.06R7.B1E10_TCLA.D6R7.B1			+100 (+100)	14 (27)	+100
THRI_COLL_7_TCSPM_LO_ION_H_CH	BLMTI.04L7.B1E10_TCSPM.B4L7.B1	2.4	1.55	51 (21)	+100	+100
	BLMTI.04R7.B2I10_TCSPM.B4R7.B2			50 (45)	+100	+100
THRI_COLL_7_TCSPM_LO_ION_V_CH	BLMTI.04L7.B1E10_TCSG.D4L7.B1	0.45	1.55	50 (100)	+100	+100
	BLMTI.04R7.B2I10_TCSG.D4R7.B2			52 (51)	+100	+100
THRI_COLL_7_TCSG_LO_ION_H_CH	BLMTI.04L7.B1E10_TCSG.B4L7.B1	1.6	1.6	200 (26)	+100	+100
	BLMTI.04L7.B1E10_TCSG.A4L7.B1			50 (58)	+100	+100
	BLMTI.04R7.B1E10_TCSG.A4R7.B1			58 (184)	+100	+100
	BLMTI.04R7.B2I10_TCSG.A4R7.B2			50 (109)	+100	+100
THRI_COLL_7_TCSG_ME_ION_V_CH	BLMTI.05L7.B1E10_TCSG.A5L7.B1	0.5	0.023	57 (53)	+100	100
	BLMTI.05R7.B2I10_TCSG.A5R7.B2			50 (139)	+100	80
Crystal in Amorphous 4.75 sigma						
THRI_COLL_7_TCSG_ME_ION_V_AM	BLMTI.06L7.B2I10_TCSG.6L7.B2	0.005	0.12		31	
	BLMTI.06R7.B1E10_TCSG.6R7.B1				13	
THRI_COLL_7_TCSPM_LO_ION_H_AM	BLMTI.05L7.B2I10_TCSG.E5L7.B2	0.025	0.02	47 (54)	20	+100
	BLMTI.05R7.B1E10_TCSG.E5R7.B1			58 (337)	27	90
For the standard case we don't need to revert to proton families, just to move the monitors to these ones						
THRI_COLL_7_TCSG_ME_ION_H_STD	BLMTI.06L7.B2I10_TCSG.6L7.B2	0.05	0.05	-	-	24
	BLMTI.06R7.B1E10_TCSG.6R7.B1			-	-	31
THRI_COLL_7_TCSG_ME_ION_V_STD	BLMTI.05L7.B1E10_TCSG.A5L7.B1	0.13	0.13	-	-	26
	BLMTI.05R7.B2I10_TCSG.A5R7.B2			-	-	24

2023 families for collimation

THRI_COLL_7_TCSG_ME_ION_V_AM Stage



2023 families for collimation

2023

BLM_NAME	BLM_DCUM	IS_CONNECTED_TO_BIS	FAMILY_NAME	MASTER_THRES_RS09	APPLIED_NXCALS_RS09	RS09_TARGET_Gys	LOSSMAP_LIMIT	POWER_LOSS_TARGET	RATIO_MASTER_LSA	MASTER_LSA_KW
BLMTI.06R7.B1E10_TCSG.6R7.B1	20141.890000	True	THRI_COLL_7_TCSG_ME_ION_V_AM	0.007349	0.007349	0.015695	Lossmap_VR-B2V-Sep23	15.000000	2.135725	7.023377
BLMTI.06L7.B2I10_TCSG.6L7.B2	19846.170000	True	THRI_COLL_7_TCSG_ME_ION_V_AM	0.007349	0.007349	0.012729	Lossmap_VR-B1V-Sep23	15.000000	1.732055	8.660231

2024

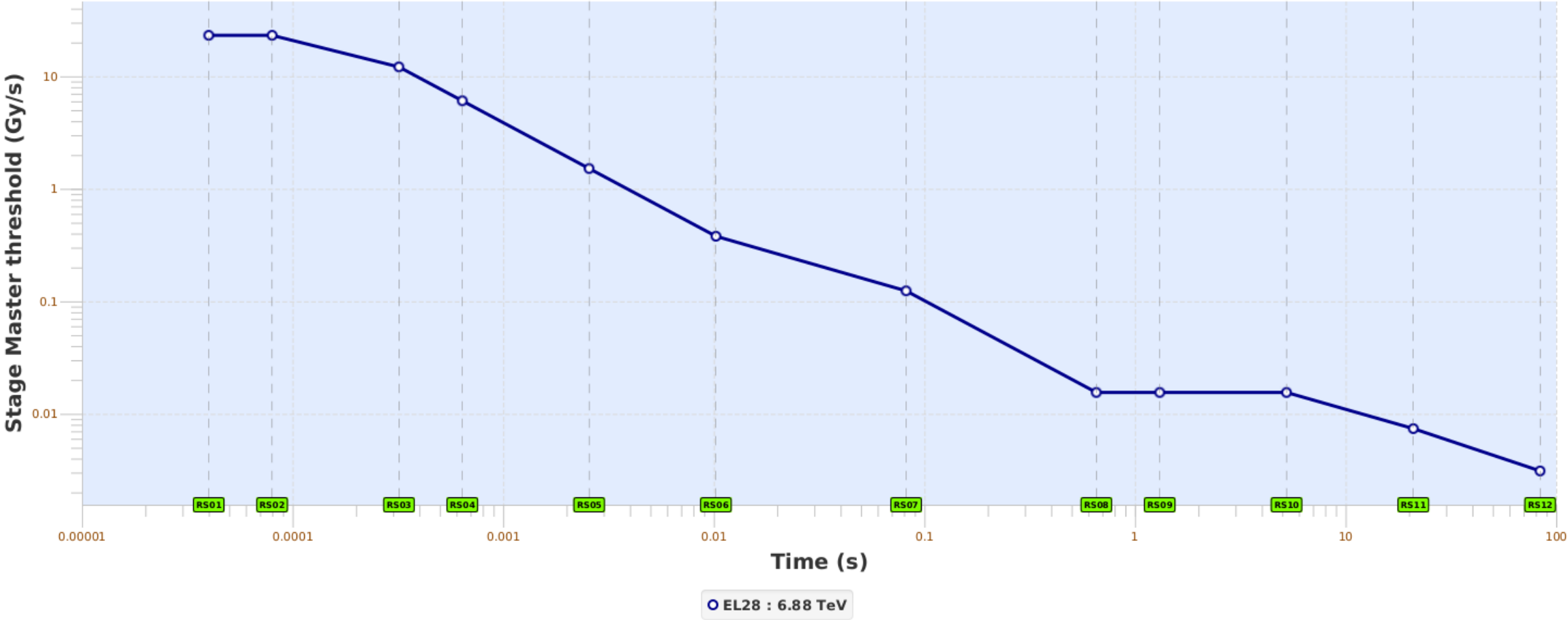
BLM_NAME	BLM_DCUM	IS_CONNECTED_TO_BIS	FAMILY_NAME	MASTER_THRES_RS09	APPLIED_NXCALS_RS09	RS09_TARGET_Gys	LOSSMAP_LIMIT	POWER_LOSS_TARGET	RATIO_MASTER_LSA	MASTER_LSA_KW
BLMTI.06L7.B2I10_TCSG.6L7.B2	19846.170000	True	THRI_COLL_7_TCSG_ME_ION_V_AM	0.007349	0.007349	0.003310	Lossmap_AM-B1V-Oct24-3	15.000000	0.450433	33.301260
BLMTI.06R7.B1E10_TCSG.6R7.B1	20141.890000	True	THRI_COLL_7_TCSG_ME_ION_V_AM	0.007349	0.007349	0.003199	Lossmap_VR-B2V-Oct24-3	15.000000	0.435239	34.463843

2023 families for collimation

Family	BLM	Factor 6.8 TeV	Factor 450 GeV	kW master channelling	kW master amorphous	kW master standard
Crystal in Channeling 4.75 sigma						
THRI_COLL_7_TCLA_LO_ION ** need but is at noise levels (only top energy)	BLMTI.06L7.B2I10_TCLA.D6L7.B2	2.5	0.133	+100 (17)	14 (+100)	+100
	BLMTI.06R7.B1E10_TCLA.D6R7.B1			+100 (+100)	14 (27)	+100
THRI_COLL_7_TCSPM_LO_ION_H_CH	BLMTI.04L7.B1E10_TCSPM.B4L7.B1	2.4	1.55	51 (21)	+100	+100
	BLMTI.04R7.B2I10_TCSPM.B4R7.B2			50 (45)	+100	+100
THRI_COLL_7_TCSPM_LO_ION_V_CH	BLMTI.04L7.B1E10_TCSG.D4L7.B1	0.45	1.55	50 (100)	+100	+100
	BLMTI.04R7.B2I10_TCSG.D4R7.B2			52 (51)	+100	+100
THRI_COLL_7_TCSG_LO_ION_H_CH	BLMTI.04L7.B1E10_TCSG.B4L7.B1	1.6	1.6	200 (26)	+100	+100
	BLMTI.04L7.B1E10_TCSG.A4L7.B1			50 (58)	+100	+100
	BLMTI.04R7.B1E10_TCSG.A4R7.B1			58 (184)	+100	+100
	BLMTI.04R7.B2I10_TCSG.A4R7.B2			50 (109)	+100	+100
THRI_COLL_7_TCSG_ME_ION_V_CH	BLMTI.05L7.B1E10_TCSG.A5L7.B1	0.5	0.023	57 (53)	+100	100
	BLMTI.05R7.B2I10_TCSG.A5R7.B2			50 (139)	+100	80
Crystal in Amorphous 4.75 sigma						
THRI_COLL_7_TCSG_ME_ION_V_AM	BLMTI.06L7.B2I10_TCSG.6L7.B2	0.005	0.12		31	
	BLMTI.06R7.B1E10_TCSG.6R7.B1				13	
THRI_COLL_7_TCSPM_LO_ION_H_AM	BLMTI.05L7.B2I10_TCSG.E5L7.B2	0.025	0.02	47 (54)	20	+100
	BLMTI.05R7.B1E10_TCSG.E5R7.B1			58 (337)	27	90
For the standard case we don't need to revert to proton families, just to move the monitors to these ones						
THRI_COLL_7_TCSG_ME_ION_H_STD	BLMTI.06L7.B2I10_TCSG.6L7.B2	0.05	0.05	-	-	24
	BLMTI.06R7.B1E10_TCSG.6R7.B1			-	-	31
THRI_COLL_7_TCSG_ME_ION_V_STD	BLMTI.05L7.B1E10_TCSG.A5L7.B1	0.13	0.13	-	-	26
	BLMTI.05R7.B2I10_TCSG.A5R7.B2			-	-	24

2023 families for collimation

THRI_COLL_7_TCSPM_LO_ION_H_AM Stage



2023 families for collimation

2023

BLM_NAME	BLM_DCUM	IS_CONNECTED_TO_BIS	FAMILY_NAME	MASTER_THRES_RS09	APPLIED_NXCALS_RS09	RS09_TARGET_Gys	LOSSMAP_LIMIT	POWER_LOSS_TARGET	RATIO_MASTER_LSA	MASTER_LSA_KW
BLMTI.05L7.B2I10_TCSG.E5L7.B2	19881.040000	True	THRI_COLL_7_TCSPM_LO_ION_H_AM	0.015494	0.015494	0.018182	Lossmap_CH-B2H-Sep23	60.000000	1.173499	51.129155
BLMTI.05R7.B1E10_TCSG.E5R7.B1	20107.290000	True	THRI_COLL_7_TCSPM_LO_ION_H_AM	0.015494	0.015494	0.014798	Lossmap_AM-B1V-Sep23	15.000000	0.955040	15.706146

2024

BLM_NAME	BLM_DCUM	IS_CONNECTED_TO_BIS	FAMILY_NAME	MASTER_THRES_RS09	APPLIED_NXCALS_RS09	RS09_TARGET_Gys	LOSSMAP_LIMIT	POWER_LOSS_TARGET	RATIO_MASTER_LSA	MASTER_LSA_KW
BLMTI.05L7.B2I10_TCSG.E5L7.B2	19881.040000	True	THRI_COLL_7_TCSPM_LO_ION_H_AM	0.015494	0.015494	0.014877	Lossmap_VR-B2H-Oct24-3	15.000000	0.960189	15.621924
BLMTI.05R7.B1E10_TCSG.E5R7.B1	20107.290000	True	THRI_COLL_7_TCSPM_LO_ION_H_AM	0.015494	0.015494	0.013872	Lossmap_VR-B1H-Oct24-3	15.000000	0.895316	16.753858

2023 families for cold magnets

2023

BLM_NAME	BLM_DCUM	IS_CONNECTED_TO_BIS	FAMILY_NAME	MASTER_THRES_RS09	APPLIED_NXCALS_RS09	RS09_TARGET_Gys	LOSSMAP_LIMIT	POWER_LOSS_TARGET	RATIO_MASTER_LSA	MASTER_LSA_KW
BLM2I.11L7.B2I24_MBA_MBA	19578.310000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.003823	Lossmap_AM-B2V-Sep23	15.000000	0.818458	18.327155
BLMAI.09L7.B2I21_MBB	19674.160000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.002764	Lossmap_AM-B2V-Sep23	15.000000	0.591685	25.351316
BLMAI.09L7.B2I24_MBA	19659.160000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.002086	Lossmap_AM-B2H-Sep23	15.000000	0.446670	33.581808
BLMAI.11L7.B2I25_MBB	19592.630000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.001931	Lossmap_AM-B2H-Sep23	15.000000	0.413442	36.280789
BLMAI.11L7.B2I23_MBA	19580.610000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.001891	Lossmap_AM-B2H-Sep23	15.000000	0.404837	37.051954
BLMAI.09L7.B2I22_MBA	19664.160000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.001827	Lossmap_AM-B2H-Sep23	15.000000	0.391144	38.349003
BLMAI.09L7.B2I21_MBA	19666.660000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.001651	Lossmap_AM-B2V-Sep23	15.000000	0.353402	42.444616
BLMAI.09L7.B2I25_MBA	19656.660000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.001630	Lossmap_AM-B2H-Sep23	15.000000	0.348958	42.985112
BLMAI.09L7.B2I23_MBA	19661.660000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.001581	Lossmap_AM-B2H-Sep23	15.000000	0.338534	44.308716
BLMAI.09L7.B2I22_MBB	19671.660000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.001388	Lossmap_AM-B2V-Sep23	15.000000	0.297243	50.463808
BLM2I.11L7.B2I22_MBA_MBA	19585.580000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.000667	Lossmap_AM-B2H-Sep23	15.000000	0.142715	105.104582
BLM2I.11L7.B2I22_MBB_MBB	19598.000000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.000656	Lossmap_AM-B2H-Sep23	15.000000	0.140355	106.871685
BLMAI.11L7.B2I21_MBA	19587.780000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.000621	Lossmap_AM-B2H-Sep23	15.000000	0.133006	112.777203
BLM2I.11L7.B2I21_MBB_MBB	19602.960000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.000042	Lossmap_AM-B2H-Sep23	15.000000	0.009051	1657.262503

2024

BLM_NAME	BLM_DCUM	IS_CONNECTED_TO_BIS	FAMILY_NAME	MASTER_THRES_RS09	APPLIED_NXCALS_RS09	RS09_TARGET_Gys	LOSSMAP_LIMIT	POWER_LOSS_TARGET	RATIO_MASTER_LSA	MASTER_LSA_KW
BLMAI.09L7.B2I21_MBB	19674.160000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.003973	Lossmap_AM-B2H-Oct24-3	15.000000	0.850603	17.634547
BLM2I.11L7.B2I24_MBA_MBA	19578.310000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.003071	Lossmap_AM-B2H-Oct24-3	15.000000	0.657487	22.814156
BLMAI.11L7.B2I23_MBA	19580.610000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.002536	Lossmap_AM-B2H-Oct24-3	15.000000	0.542932	27.627763
BLMAI.09L7.B2I24_MBA	19659.160000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.002316	Lossmap_AM-B2H-Oct24-3	15.000000	0.495746	30.257435
BLMAI.09L7.B2I21_MBA	19666.660000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.002307	Lossmap_AM-B2H-Oct24-3	15.000000	0.493846	30.373822
BLMAI.09L7.B2I22_MBA	19664.160000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.002228	Lossmap_AM-B2H-Oct24-3	15.000000	0.476906	31.452729
BLMAI.09L7.B2I22_MBB	19671.660000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.001995	Lossmap_AM-B2H-Oct24-3	15.000000	0.427061	35.123806
BLMAI.11L7.B2I25_MBB	19592.630000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.001853	Lossmap_AM-B2H-Oct24-3	15.000000	0.396792	37.803152
BLMAI.09L7.B2I23_MBA	19661.660000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.001850	Lossmap_AM-B2H-Oct24-3	15.000000	0.396151	37.864310
BLMAI.09L7.B2I25_MBA	19656.660000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.001831	Lossmap_AM-B2H-Oct24-3	15.000000	0.391903	38.274761
BLM2I.11L7.B2I22_MBB_MBB	19598.000000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.000795	Lossmap_AM-B2H-Oct24-3	15.000000	0.170268	88.096397
BLM2I.11L7.B2I22_MBA_MBA	19585.580000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.000707	Lossmap_AM-B2H-Oct24-3	15.000000	0.151372	99.093650
BLMAI.11L7.B2I21_MBA	19587.780000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.000642	Lossmap_AM-B2H-Oct24-3	15.000000	0.137511	109.082105
BLM2I.11L7.B2I21_MBB_MBB	19602.960000	True	THRI.IP7.P2_MB_ION_COLL	0.004671	0.002336	0.000042	Lossmap_AM-B2H-Oct24-3	15.000000	0.009077	1652.523260

2023 families for cold magnets

2023

BLM_NAME	BLM_DCUM	IS_CONNECTED_TO_BIS	FAMILY_NAME	MASTER_THRES_RS09	APPLIED_NXCALS_RS09	RS09_TARGET_Gys	LOSSMAP_LIMIT	POWER_LOSS_TARGET	RATIO_MASTER_LSA	MASTER_LSA_KW
BLMAI.09R7.B1E30_MBA	20319.160000	True	THRI.IP7.P3_MB_ION_COLL	0.007862	0.003931	0.005690	Lossmap_AM-B1V-Sep23	15.000000	0.723799	20.723989
BLMAI.09L7.B2I30_MBB	19669.160000	True	THRI.IP7.P3_MB_ION_COLL	0.007862	0.003931	0.004989	Lossmap_AM-B2V-Sep23	15.000000	0.634656	23.634851
BLMAI.11L7.B2I30_MBB	19589.740000	True	THRI.IP7.P3_MB_ION_COLL	0.007862	0.003931	0.001937	Lossmap_AM-B2V-Sep23	15.000000	0.246373	60.883247
BLMAI.11R7.B1E30_MBA	20398.220000	True	THRI.IP7.P3_MB_ION_COLL	0.007862	0.003931	0.001533	Lossmap_AM-B1V-Sep23	15.000000	0.195049	76.903882

2024

BLM_NAME	BLM_DCUM	IS_CONNECTED_TO_BIS	FAMILY_NAME	MASTER_THRES_RS09	APPLIED_NXCALS_RS09	RS09_TARGET_Gys	LOSSMAP_LIMIT	POWER_LOSS_TARGET	RATIO_MASTER_LSA	MASTER_LSA_KW
BLMAI.09R7.B1E30_MBA	20319.160000	True	THRI.IP7.P3_MB_ION_COLL	0.007862	0.003931	0.008421	Lossmap_AM-B1H-Oct24-3	15.000000	1.071204	14.002932
BLMAI.09L7.B2I30_MBB	19669.160000	True	THRI.IP7.P3_MB_ION_COLL	0.007862	0.003931	0.007182	Lossmap_AM-B2H-Oct24-3	15.000000	0.913528	16.419858
BLMAI.11R7.B1E30_MBA	20398.220000	True	THRI.IP7.P3_MB_ION_COLL	0.007862	0.003931	0.002672	Lossmap_AM-B1H-Oct24-3	15.000000	0.339829	44.139839
BLMAI.11L7.B2I30_MBB	19589.740000	True	THRI.IP7.P3_MB_ION_COLL	0.007862	0.003931	0.001864	Lossmap_AM-B2H-Oct24-3	15.000000	0.237102	63.263891

2023 families for cold magnets

2023

BLM_NAME	BLM_DCUM	IS_CONNECTED_TO_BIS	FAMILY_NAME	MASTER_THRES_RS09	APPLIED_NXCALS_RS09	RS09_TARGET_Gys	LOSSMAP_LIMIT	POWER_LOSS_TARGET	RATIO_MASTER_LSA	MASTER_LSA_KW
BLMBI.09L7.B0T10_MBB-MBA_08L7	19670.530000	True	THRI.ARDS_MBMB_ION_COLL	0.003855	0.001927	0.002525	Lossmap_AM-B2V-Sep23	15.000000	0.655176	22.894595
BLMBI.09R7.B0T10_MBA-MBB_08R7	20317.790000	True	THRI.ARDS_MBMB_ION_COLL	0.003855	0.001927	0.002142	Lossmap_AM-B1V-Sep23	15.000000	0.555589	26.998362
BLMBI.11R7.B0T20_MBB-LEDR_11R7	20412.980000	True	THRI.ARDS_MBMB_ION_COLL	0.003855	0.001927	0.001562	Lossmap_AM-B1H-Sep23	15.000000	0.405317	37.008072
BLMBI.11L7.B0T10_MBB-MBA_10L7	19591.000000	True	THRI.ARDS_MBMB_ION_COLL	0.003855	0.001927	0.000875	Lossmap_AM-B2V-Sep23	15.000000	0.226950	66.093765
BLMBI.11L7.B0T20_MBA-LEIR_11L7	19575.340000	True	THRI.ARDS_MBMB_ION_COLL	0.003855	0.001927	0.000643	Lossmap_AM-B2V-Sep23	15.000000	0.166854	89.898727
BLMBI.11R7.B0T10_MBA-MBB_10R7	20397.320000	True	THRI.ARDS_MBMB_ION_COLL	0.003855	0.001927	0.000333	Lossmap_AM-B1V-Sep23	15.000000	0.086346	173.720617

2024

BLM_NAME	BLM_DCUM	IS_CONNECTED_TO_BIS	FAMILY_NAME	MASTER_THRES_RS09	APPLIED_NXCALS_RS09	RS09_TARGET_Gys	LOSSMAP_LIMIT	POWER_LOSS_TARGET	RATIO_MASTER_LSA	MASTER_LSA_KW
BLMBI.09L7.B0T10_MBB-MBA_08L7	19670.530000	True	THRI.ARDS_MBMB_ION_COLL	0.003855	0.001927	0.003575	Lossmap_AM-B2H-Oct24-3	15.000000	0.927585	16.171028
BLMBI.09R7.B0T10_MBA-MBB_08R7	20317.790000	True	THRI.ARDS_MBMB_ION_COLL	0.003855	0.001927	0.003316	Lossmap_AM-B1H-Oct24-3	15.000000	0.860290	17.435988
BLMBI.11R7.B0T20_MBB-LEDR_11R7	20412.980000	True	THRI.ARDS_MBMB_ION_COLL	0.003855	0.001927	0.001626	Lossmap_AM-B1H-Oct24-3	15.000000	0.421799	35.561955
BLMBI.11L7.B0T10_MBB-MBA_10L7	19591.000000	True	THRI.ARDS_MBMB_ION_COLL	0.003855	0.001927	0.000804	Lossmap_AM-B2H-Oct24-3	15.000000	0.208488	71.946490
BLMBI.11R7.B0T10_MBA-MBB_10R7	20397.320000	True	THRI.ARDS_MBMB_ION_COLL	0.003855	0.001927	0.000629	Lossmap_AM-B1H-Oct24-3	15.000000	0.163206	91.908551
BLMBI.11L7.B0T20_MBA-LEIR_11L7	19575.340000	True	THRI.ARDS_MBMB_ION_COLL	0.003855	0.001927	0.000609	Lossmap_AM-B2H-Oct24-3	15.000000	0.158043	94.911116

2023 families for cold magnets

2023

BLM_NAME	BLM_DCUM	IS_CONNECTED_TO_BIS	FAMILY_NAME	MASTER_THRES_RS09	APPLIED_NXCALS_RS09	RS09_TARGET_Gys	LOSSMAP_LIMIT	POWER_LOSS_TARGET	RATIO_MASTER_LSA	MASTER_LSA_KW
BLMQI.11R7.B1E10_MQ	20428.580000	True	THRI.ARDS.P1_MQ_ION_COLL	0.007114	0.003557	0.006696	Lossmap_AM-B1V-Sep23	15.000000	0.941260	15.936077
BLMQI.09L7.B2I10_MQ	19653.660000	True	THRI.ARDS.P1_MQ_ION_COLL	0.007114	0.003557	0.006234	Lossmap_AM-B2H-Sep23	15.000000	0.876380	17.115857
BLMQI.11L7.B2I10_MQ	19560.420000	True	THRI.ARDS.P1_MQ_ION_COLL	0.007114	0.003557	0.005629	Lossmap_AM-B2H-Sep23	15.000000	0.791331	18.955412
BLMQI.09R7.B1E10_MQ	20335.330000	True	THRI.ARDS.P1_MQ_ION_COLL	0.007114	0.003557	0.004520	Lossmap_AM-B1V-Sep23	15.000000	0.635309	23.610549
BLMQI.13R7.B1E10_MQ	20536.750000	True	THRI.ARDS.P1_MQ_ION_COLL	0.007114	0.003557	0.002140	Lossmap_AM-B1H-Sep23	15.000000	0.300752	49.875025
BLMQI.13L7.B2I10_MQ	19452.270000	True	THRI.ARDS.P1_MQ_ION_COLL	0.007114	0.003557	0.000731	Lossmap_AM-B2V-Sep23	15.000000	0.102821	145.884479

2024

BLM_NAME	BLM_DCUM	IS_CONNECTED_TO_BIS	FAMILY_NAME	MASTER_THRES_RS09	APPLIED_NXCALS_RS09	RS09_TARGET_Gys	LOSSMAP_LIMIT	POWER_LOSS_TARGET	RATIO_MASTER_LSA	MASTER_LSA_KW
BLMQI.11L7.B2I10_MQ	19560.420000	True	THRI.ARDS.P1_MQ_ION_COLL	0.007114	0.003557	0.009141	Lossmap_AM-B2H-Oct24-3	15.000000	1.284880	11.674241
BLMQI.11R7.B1E10_MQ	20428.580000	True	THRI.ARDS.P1_MQ_ION_COLL	0.007114	0.003557	0.007214	Lossmap_AM-B1V-Oct24-3	15.000000	1.014104	14.791379
BLMQI.09L7.B2I10_MQ	19653.660000	True	THRI.ARDS.P1_MQ_ION_COLL	0.007114	0.003557	0.007016	Lossmap_AM-B2H-Oct24-3	15.000000	0.986191	15.210032
BLMQI.13R7.B1E10_MQ	20536.750000	True	THRI.ARDS.P1_MQ_ION_COLL	0.007114	0.003557	0.005574	Lossmap_AM-B1V-Oct24-3	15.000000	0.783495	19.144990
BLMQI.09R7.B1E10_MQ	20335.330000	True	THRI.ARDS.P1_MQ_ION_COLL	0.007114	0.003557	0.005448	Lossmap_AM-B1H-Oct24-3	15.000000	0.765836	19.586428
BLMQI.13L7.B2I10_MQ	19452.270000	True	THRI.ARDS.P1_MQ_ION_COLL	0.007114	0.003557	0.000014	Lossmap_AM-B2V-Oct24-3	15.000000	0.001942	7724.166884

2023 families for Q6

2023

BLM_NAME	BLM_DCUM	IS_CONNECTED_TO_BIS	FAMILY_NAME	MASTER_THRES_RS09	APPLIED_NXCALS_RS09	RS09_TARGET_Gys	LOSSMAP_LIMIT	POWER_LOSS_TARGET	RATIO_MASTER_LSA	MASTER_LSA_kw
BLMQI.06R7.B1E10_MQTL	20219.170000	True	THRI.IP7.P1_MQTL_FT_ION_COLL	0.011802	0.011802	0.018228	Lossmap_VR-B1H-Sep23	15.000000	1.544438	9.712272
BLMQI.06L7.B2I10_MQTL	19769.690000	True	THRI.IP7.P1_MQTL_FT_ION_COLL	0.011802	0.011802	0.005321	Lossmap_AM-B2H-Sep23	15.000000	0.450851	33.270406

2024

BLM_NAME	BLM_DCUM	IS_CONNECTED_TO_BIS	FAMILY_NAME	MASTER_THRES_RS09	APPLIED_NXCALS_RS09	RS09_TARGET_Gys	LOSSMAP_LIMIT	POWER_LOSS_TARGET	RATIO_MASTER_LSA	MASTER_LSA_kw
BLMQI.06R7.B1E10_MQTL	20219.170000	True	THRI.IP7.P1_MQTL_FT_ION_COLL	0.011802	0.011802	0.013627	Lossmap_AM-B1H-Oct24-3	15.000000	1.154557	12.991994
BLMQI.06L7.B2I10_MQTL	19769.690000	True	THRI.IP7.P1_MQTL_FT_ION_COLL	0.011802	0.011802	0.005398	Lossmap_AM-B2H-Oct24-3	15.000000	0.457342	32.798194

2023

BLM_NAME	BLM_DCUM	IS_CONNECTED_TO_BIS	FAMILY_NAME	MASTER_THRES_RS09	APPLIED_NXCALS_RS09	RS09_TARGET_Gys	LOSSMAP_LIMIT	POWER_LOSS_TARGET	RATIO_MASTER_LSA	MASTER_LSA_kw
BLMQI.06R7.B1E20_MQTL	20223.470000	True	THRI.IP7.P2_MQTL_FT_ION_COLL	0.002487	0.002487	0.004506	Lossmap_VR-B1H-Sep23	15.000000	1.811812	8.279003
BLMQI.06L7.B2I20_MQTL	19765.060000	True	THRI.IP7.P2_MQTL_FT_ION_COLL	0.002487	0.002487	0.001299	Lossmap_AM-B2H-Sep23	15.000000	0.522108	28.729708

2024

BLM_NAME	BLM_DCUM	IS_CONNECTED_TO_BIS	FAMILY_NAME	MASTER_THRES_RS09	APPLIED_NXCALS_RS09	RS09_TARGET_Gys	LOSSMAP_LIMIT	POWER_LOSS_TARGET	RATIO_MASTER_LSA	MASTER_LSA_kw
BLMQI.06R7.B1E20_MQTL	20223.470000	True	THRI.IP7.P2_MQTL_FT_ION_COLL	0.002487	0.002487	0.002136	Lossmap_AM-B1H-Oct24-3	15.000000	0.858840	17.465419
BLMQI.06L7.B2I20_MQTL	19765.060000	True	THRI.IP7.P2_MQTL_FT_ION_COLL	0.002487	0.002487	0.001200	Lossmap_AM-B2H-Oct24-3	15.000000	0.482350	31.097738

Rest of BLMs limiting (not in ion families)

2023

BLMTI.04L2.B1E10_TCTPV.4L2.B1	3216.830000	True	THRI_TCTVA	0.001566	0.500000	0.005826	0.048027	Lossmap_AM-B1V-Sep23	15.000000	30.670469	0.489070
BLMTI.04L2.B1E10_TCTPH.4L2.B1	3214.830000	True	THRI_TCTVA	0.001566	0.500000	0.005826	0.003806	Lossmap_AM-B1V-Sep23	15.000000	2.430242	6.172226
BLMQI.08R7.B1E10_MQ	20296.270000	True	THRI.ARDS.P1_MQ	0.004743	0.333000	0.002371	0.010948	Lossmap_VR-B1H-Sep23	15.000000	2.308359	6.498124
BLMTI.04R7.B2I10_TCSG.B4R7.B2	20004.030000	True	THRI_COLL_7_TCSG_LO	0.606921	0.600000	0.364153	0.779345	Lossmap_CH-B2H-Sep23	60.000000	1.284096	46.725461
BLM2I.11R7.B1E23_MBB_MBB	20405.650000	True	THRI_B1.2_MB	0.004671	0.333000	0.002336	0.005601	Lossmap_AM-B1V-Sep23	15.000000	1.199092	12.509469
BLMQI.06R7.B2I20_MQTL	20222.270000	True	THRI.IP7.P2_MQTL_FT	0.001658	0.600000	0.001658	0.001563	Lossmap_VR-B1H-Sep23	15.000000	0.942728	15.911272
BLM2I.11R7.B1E24_MBB_MBB	20409.860000	True	THRI_B1.2_MB	0.004671	0.333000	0.002336	0.004402	Lossmap_AM-B1H-Sep23	15.000000	0.942291	15.918651
BLMQI.08R7.B1E20_MQ	20298.680000	True	THRI.DS.P2_MQ	0.004743	0.333000	0.002371	0.004380	Lossmap_VR-B1H-Sep23	15.000000	0.923588	16.241004
BLMTI.06R7.B1E10_TCLA.C6R7.B1	20213.360000	True	THRI_COLL_7_TCLA_LO	0.031788	0.600000	0.019073	0.027055	Lossmap_VR-B1H-Sep23	15.000000	0.851115	17.623941

2024

BLMQI.08R7.B1E30_MQ	20303.420000	True	THRI.ARDS.P3_MQ	0.006708	0.333000	0.003354	0.016318	Lossmap_AM-B1V-Oct24-3	15.000000	2.432422	6.166694
BLMQI.08L7.B2I30_MQ	19684.980000	True	THRI.ARDS.P3_MQ	0.006708	0.333000	0.003354	0.015650	Lossmap_AM-B2V-Oct24-3	15.000000	2.332933	6.429675
BLMAI.09R7.B1E21_MBA	20311.160000	True	THRI_B1.2_MB	0.004671	0.333000	0.002336	0.007269	Lossmap_AM-B1V-Oct24-3	15.000000	1.556180	9.638991
BLM2I.11R7.B1E23_MBB_MBB	20405.650000	True	THRI_B1.2_MB	0.004671	0.333000	0.002336	0.007144	Lossmap_AM-B1V-Oct24-3	15.000000	1.529483	9.807236
BLM2I.11R7.B1E24_MBB_MBB	20409.860000	True	THRI_B1.2_MB	0.004671	0.333000	0.002336	0.006299	Lossmap_AM-B1H-Oct24-3	15.000000	1.348543	11.123117
BLMAI.09R7.B1E22_MBA	20314.160000	True	THRI_B1.2_MB	0.004671	0.333000	0.002336	0.006158	Lossmap_AM-B1V-Oct24-3	15.000000	1.318258	11.378653
BLMAI.09R7.B1E23_MBA	20316.660000	True	THRI_B1.2_MB	0.004671	0.333000	0.002336	0.005662	Lossmap_AM-B1H-Oct24-3	15.000000	1.212126	12.374950
BLMTI.04R7.B2I10_TCSG.B4R7.B2	20004.030000	True	THRI_COLL_7_TCSG_LO	0.606921	0.600000	0.364153	0.724384	Lossmap_CH-B2H-Oct24-3	60.000000	1.193539	50.270683
BLMAI.09R7.B1E21_MBB	20321.660000	True	THRI_B1.2_MB	0.004671	0.333000	0.002336	0.005145	Lossmap_AM-B1H-Oct24-3	15.000000	1.101358	13.619553
BLMAI.09R7.B1E22_MBB	20324.160000	True	THRI_B1.2_MB	0.004671	0.333000	0.002336	0.004015	Lossmap_AM-B1H-Oct24-3	15.000000	0.859449	17.453044

Things to do

- Agree on power loss for each RS and crystal orientation
- Double-check differences wrt 2023
 - Are new families needed? Some extra monitors would need to be moved to the ion families?
 - Check new factors needed for each RS
- Check values at injection energy (no loss maps 2024)