Beam Dump on 07/07/2010 20.22 (local time)

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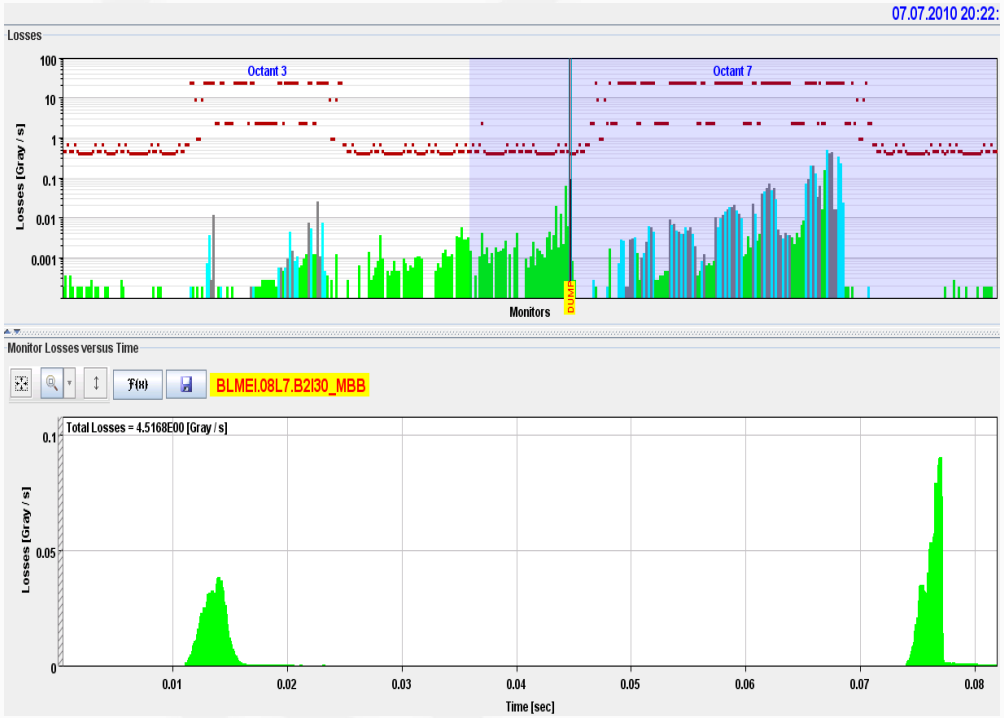
MPP meeting 16th of July 2010

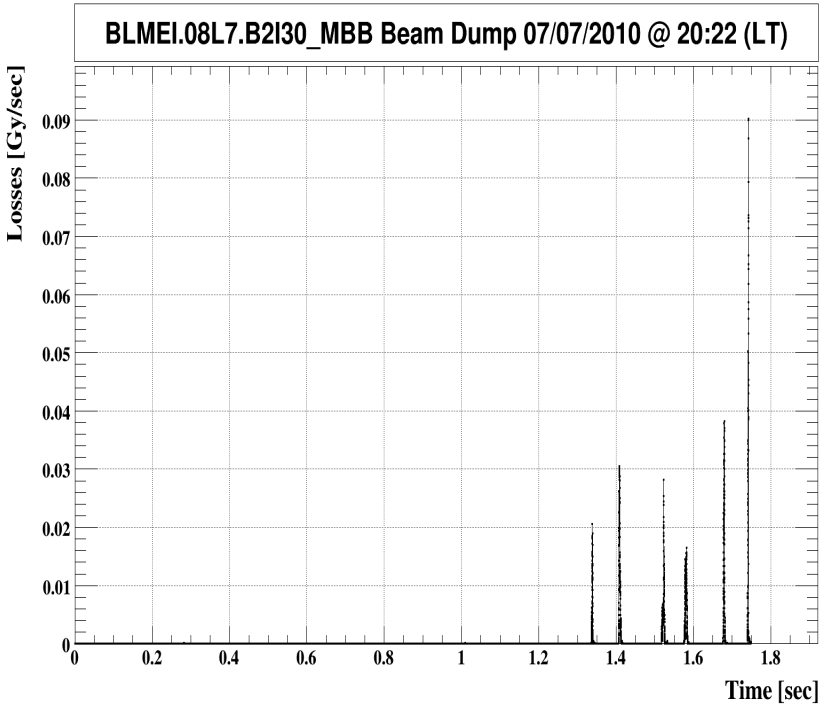
BLM PM Buffer for BLMEI.08L7.B2I30_MBB

Choose longer BLM PM buffer for analysis

PM application: BLM data of 0.082 sec



Longer PM buffer: BLM data of min. 1.72 sec

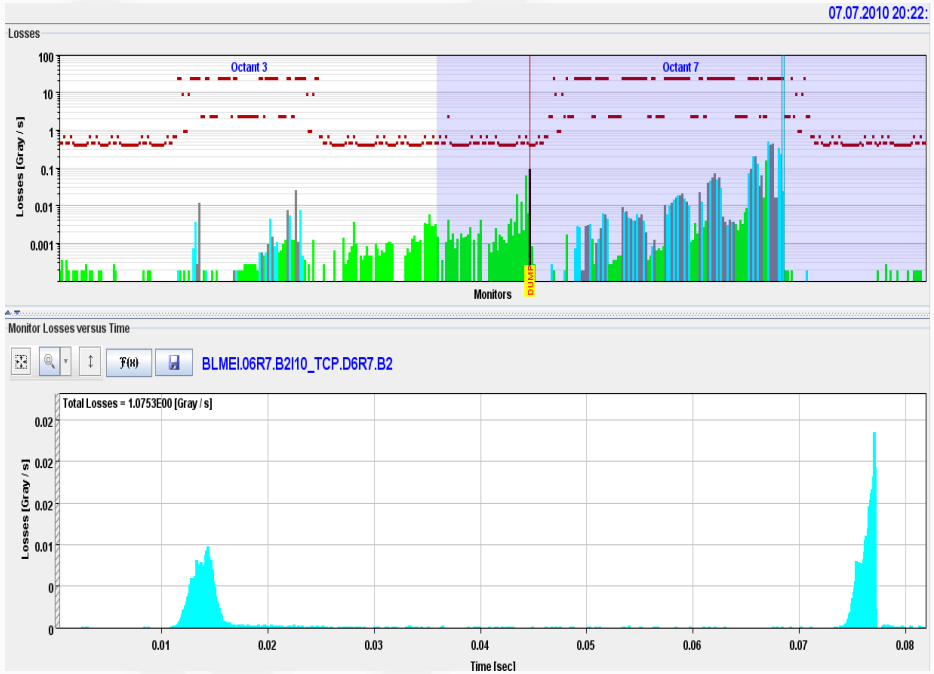


One can see 5 times higher losses before the beam dump event in the long PM buffer data instead of only once from the application data.

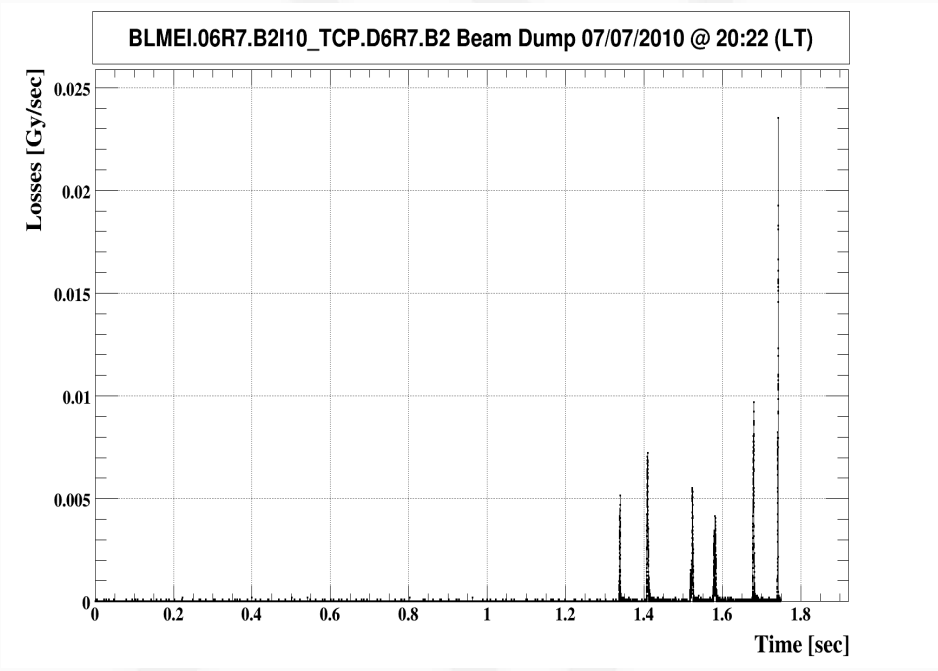
BLM PM Buffer BLMEI.06R7.B2I10_TCP.D6R7.B2

Choose longer BLM PM buffer for analysis

PM application: BLM data of 0.082 sec

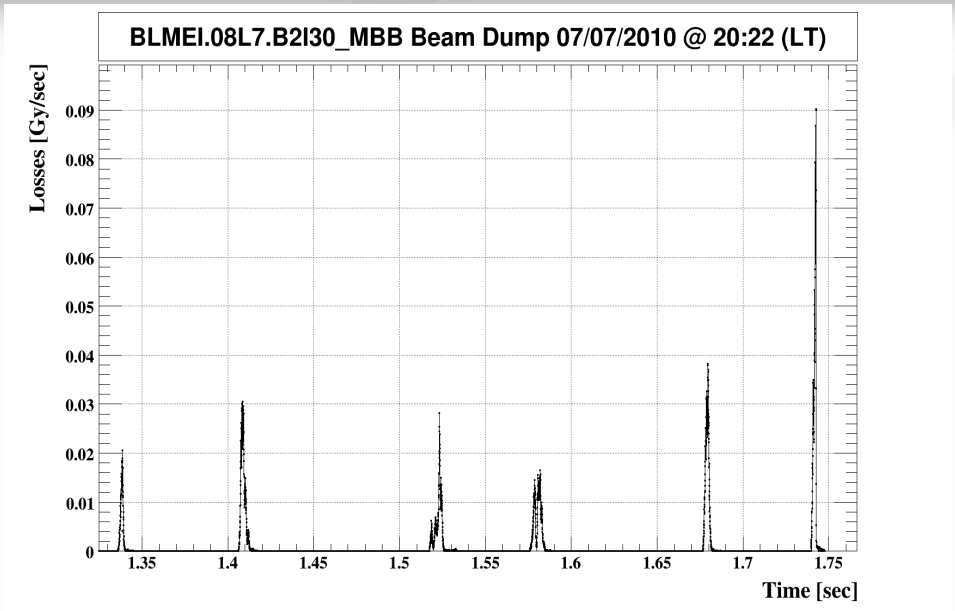


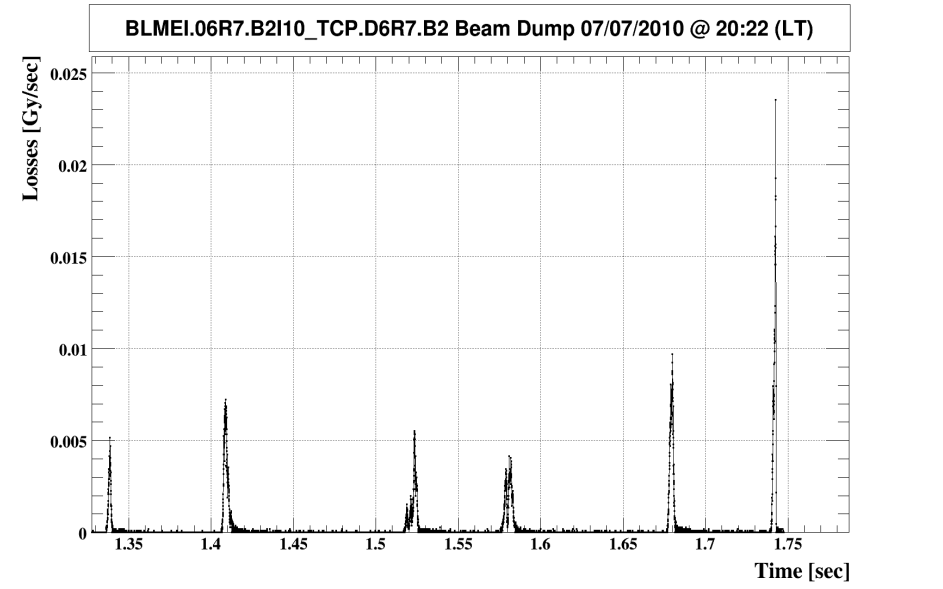
Longer PM buffer: BLM data of min. 1.72 sec



One can see 5 times higher losses before the beam dump event in the long PM buffer data instead of only once from the application data.

Comparison between TCP and MBB monitor



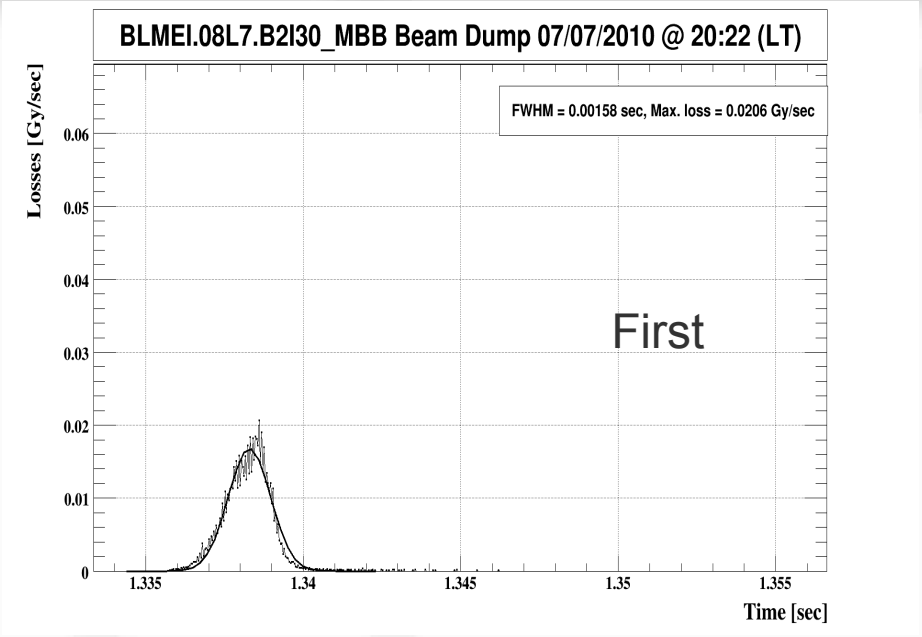


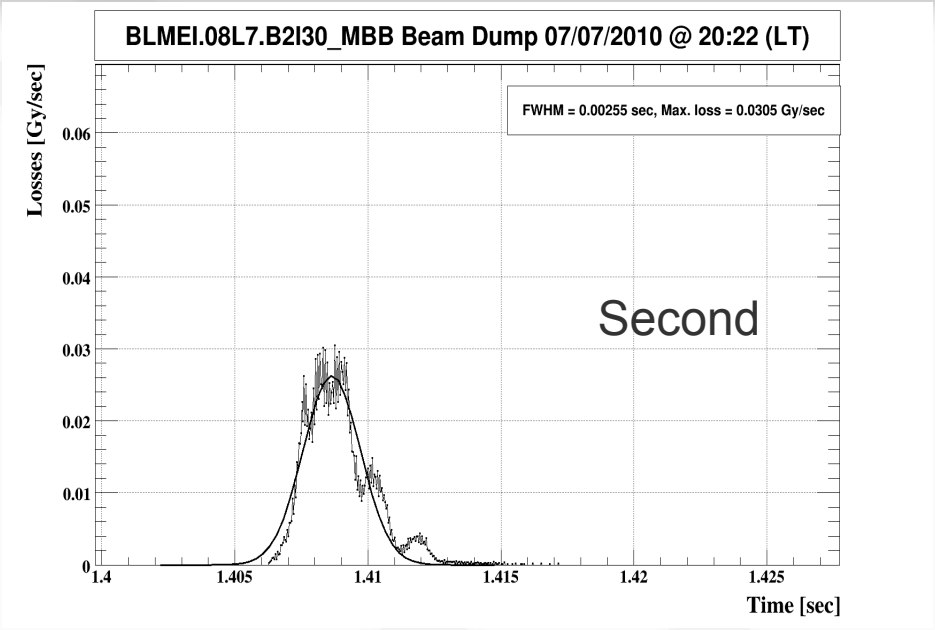
- losses occure at the same time
- losses appear in equivalent time intervals

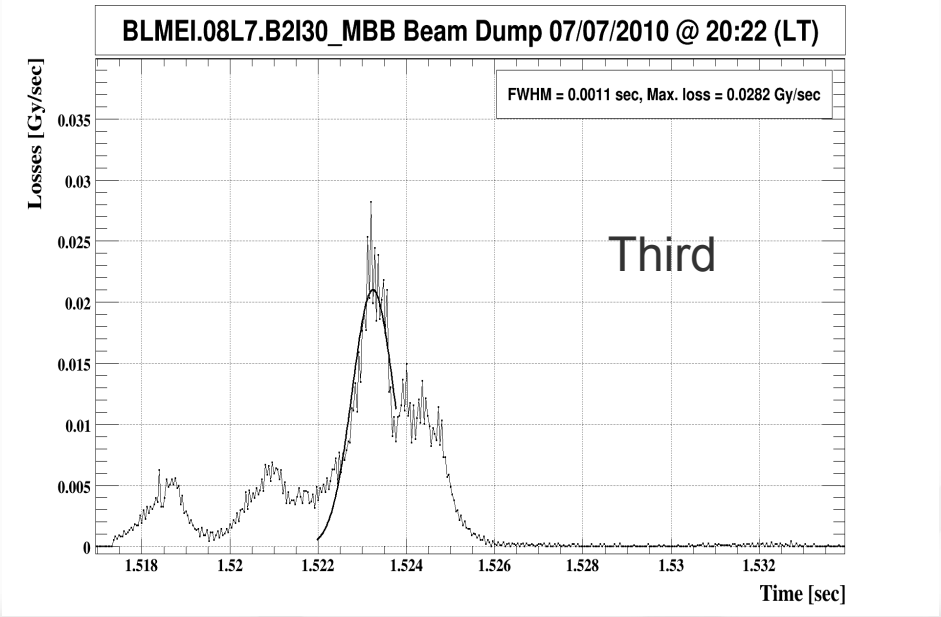
Summary for maxmimum losses:

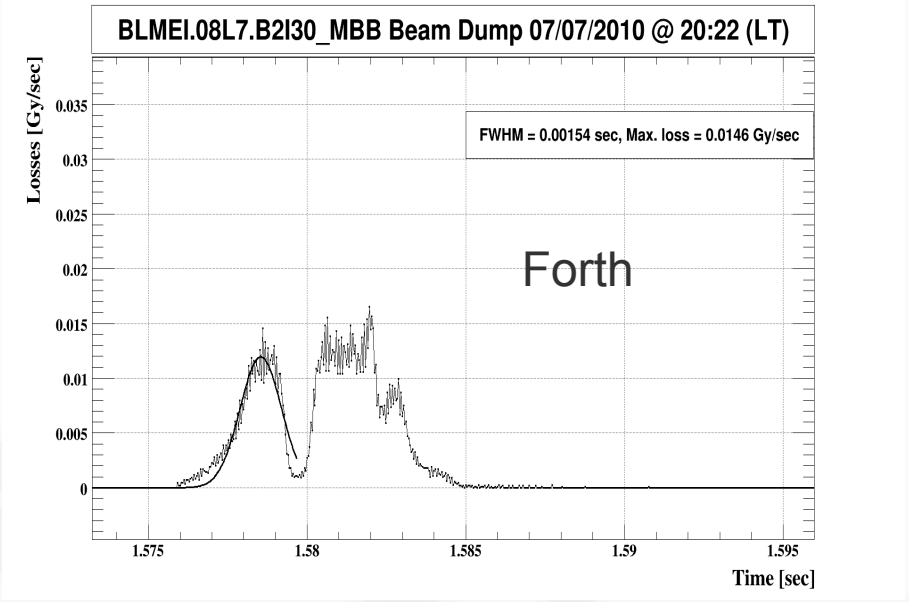
Loss Nr.	Time TCP [sec]	Time MBB [sec]	Diff. TCP	Diff. MBB
1	1.33864	1.33860	0.07040	0.07016
2	1.40904	1.40876	0.11428	0.11444
3	1.52332	1.52320	0.05744	0.05876
4	1.58076	1.58196	0.09916	0.09764
5	1.74264	1.74256	0.06272	0.06296

Comparison of Different Losses (1-4)

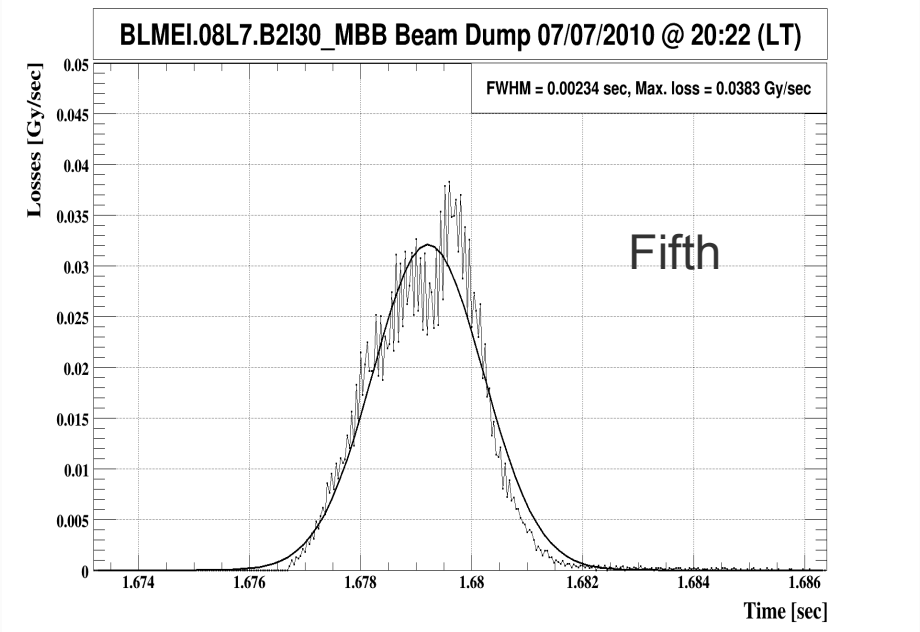


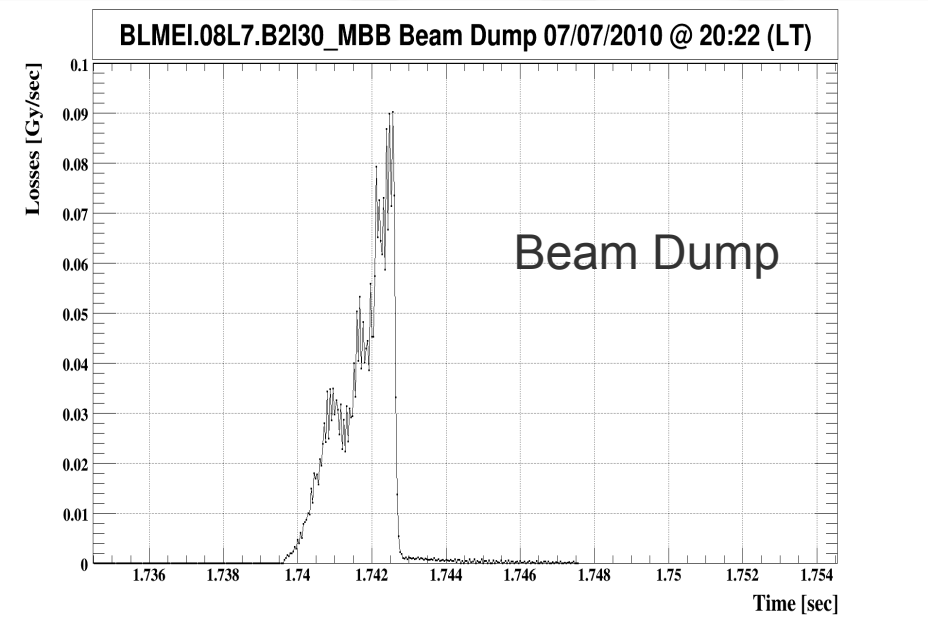




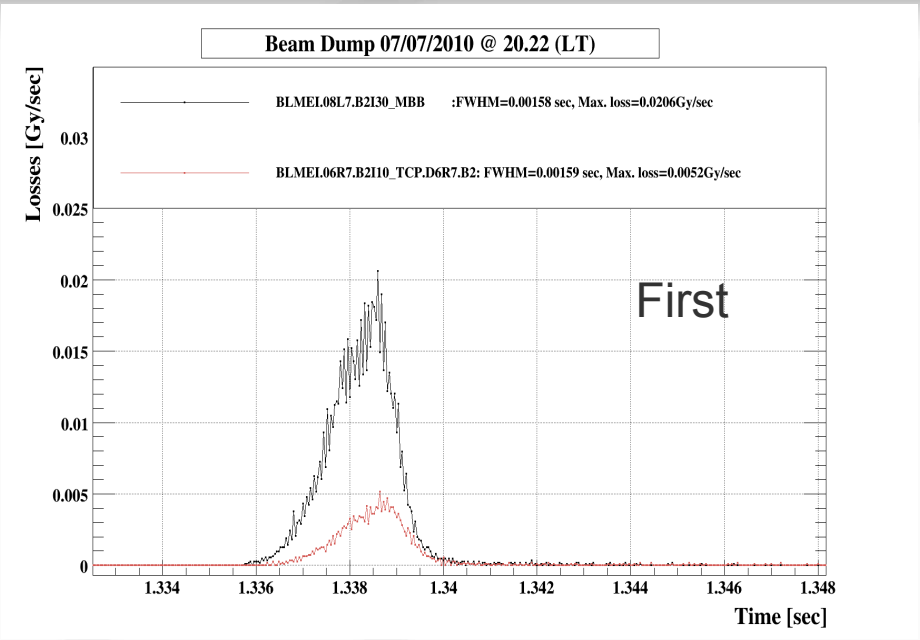


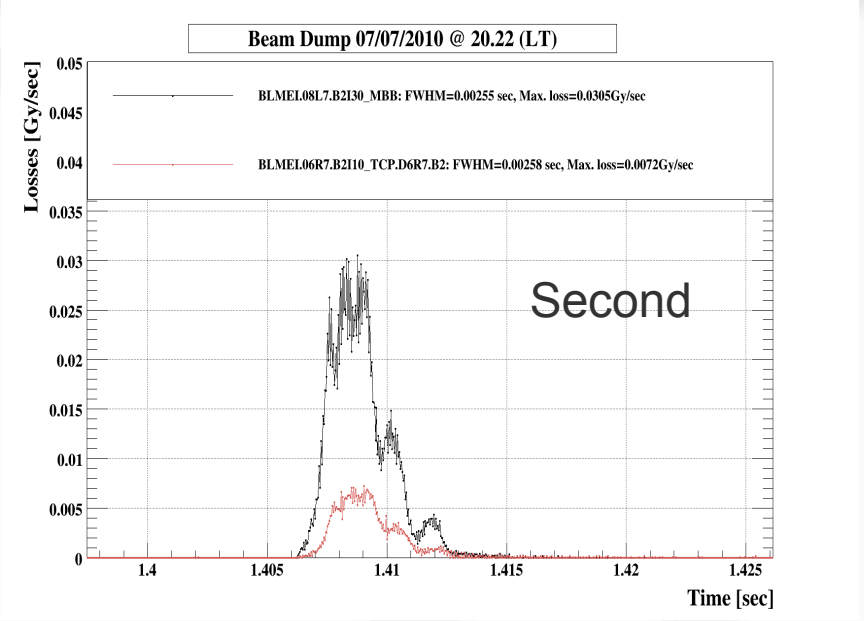
Comparison of Different Losses (5 and dump)

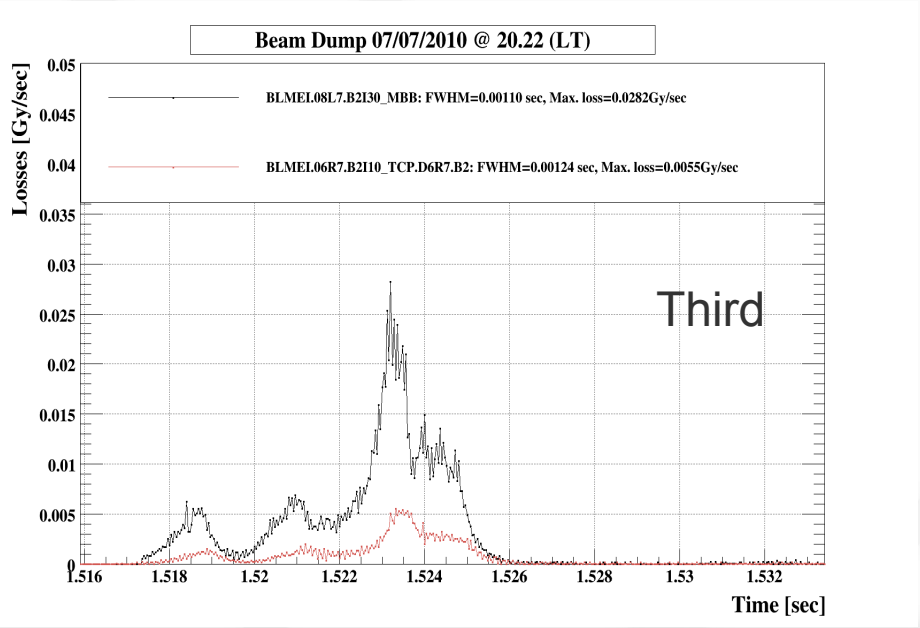


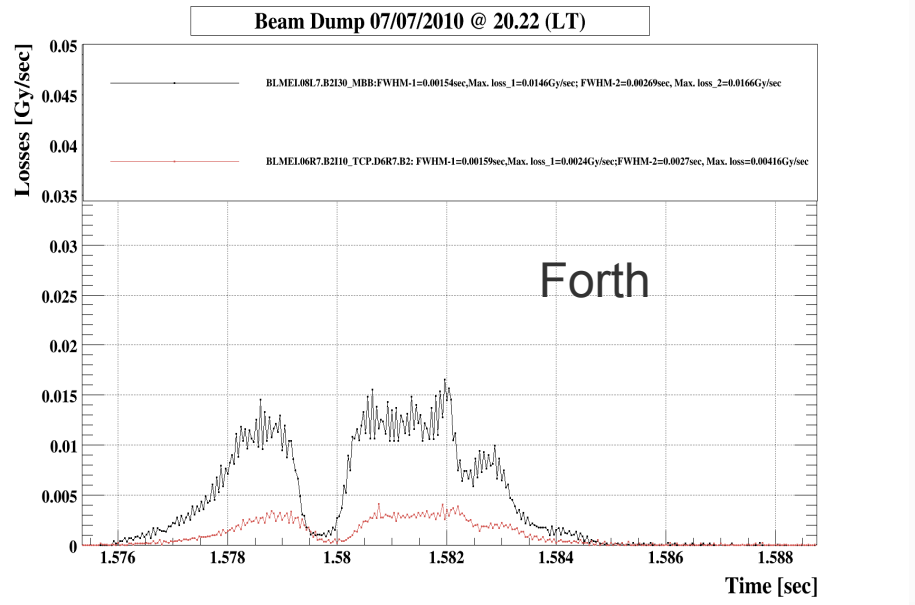


Comparison of TCP and MBB Losses (1-4)

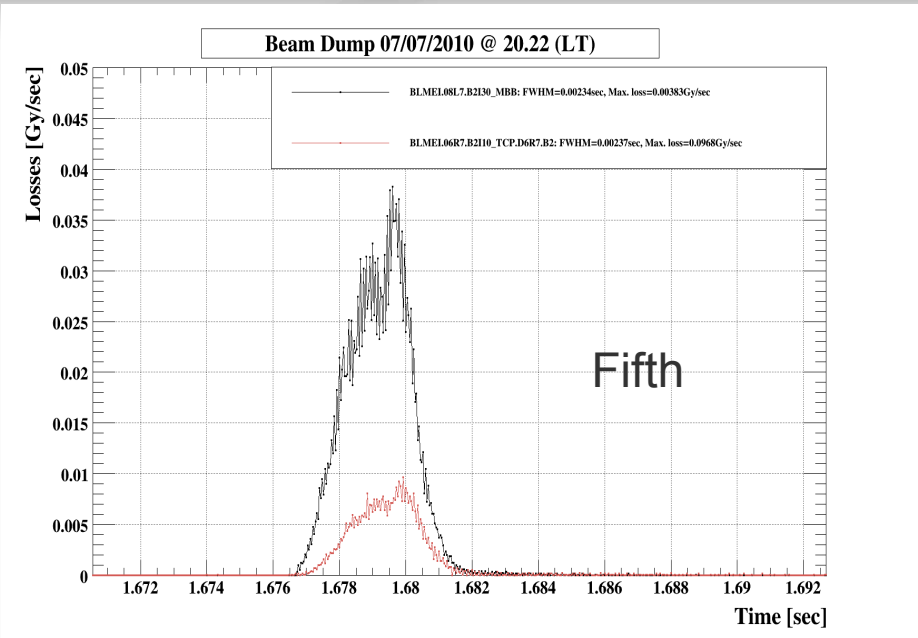


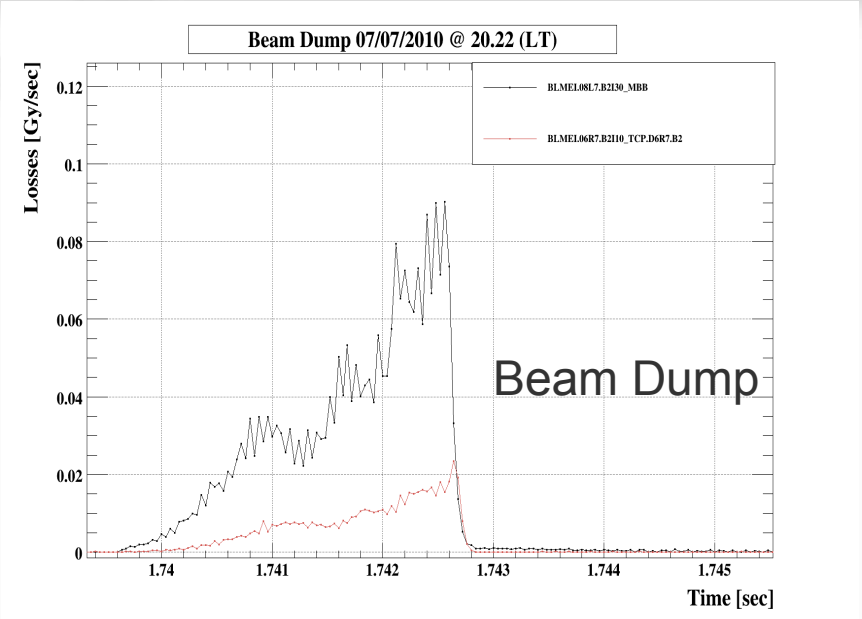






Comparison of TCP and MBB Losses (5 and dump)





Loss Nr.	FWHM TCP [sec]	FWHM MBB [sec]	Amplitude TCP [Gy/sec]	Amplitude MBB [Gy/sec]
1	0.00159	0.00158	0.00516	0.02063
2	0.00258	0.00255	0.00724	0.03050
3	0.00124	0.00104	0.00552	0.02824
4	(0.00159) 0.00277	(0.00154) 0.00269	(0.00344) 0.00416	(0.01457) 0.01656
5	0.00237	0.00234	0.00968	0.03828

Conclusion

Loss Nr.	Protons lost on TCP	Protons lost on MBB
1	8.459e4	7.859e4
2	11.86e4	11.619e4
3	9.049e4	10.758e4
4	5.639e4, 6.819e4	5.550e4 6.309e4
5	15.88e4	14.58e4

TCP:
- From simulations: 2e-12Gy/p (@ 3.5TeV)
- From measurement: 2.44e-12Gy/p (@ 3.5TeV)

MBB:
- From simulations: 1.5e-12Gy/p (@ 3.5TeV)
- From measurement: 1.05e-11Gy/p (@ 3.5TeV)

Losses show a pattern in time (pairs like bumps 1 and 2, 3 and 4, 5 and dump)
Maximum losses appear with same ratio (pairs)
Number of lost protons seems to be almost equal for TCP and MBB