

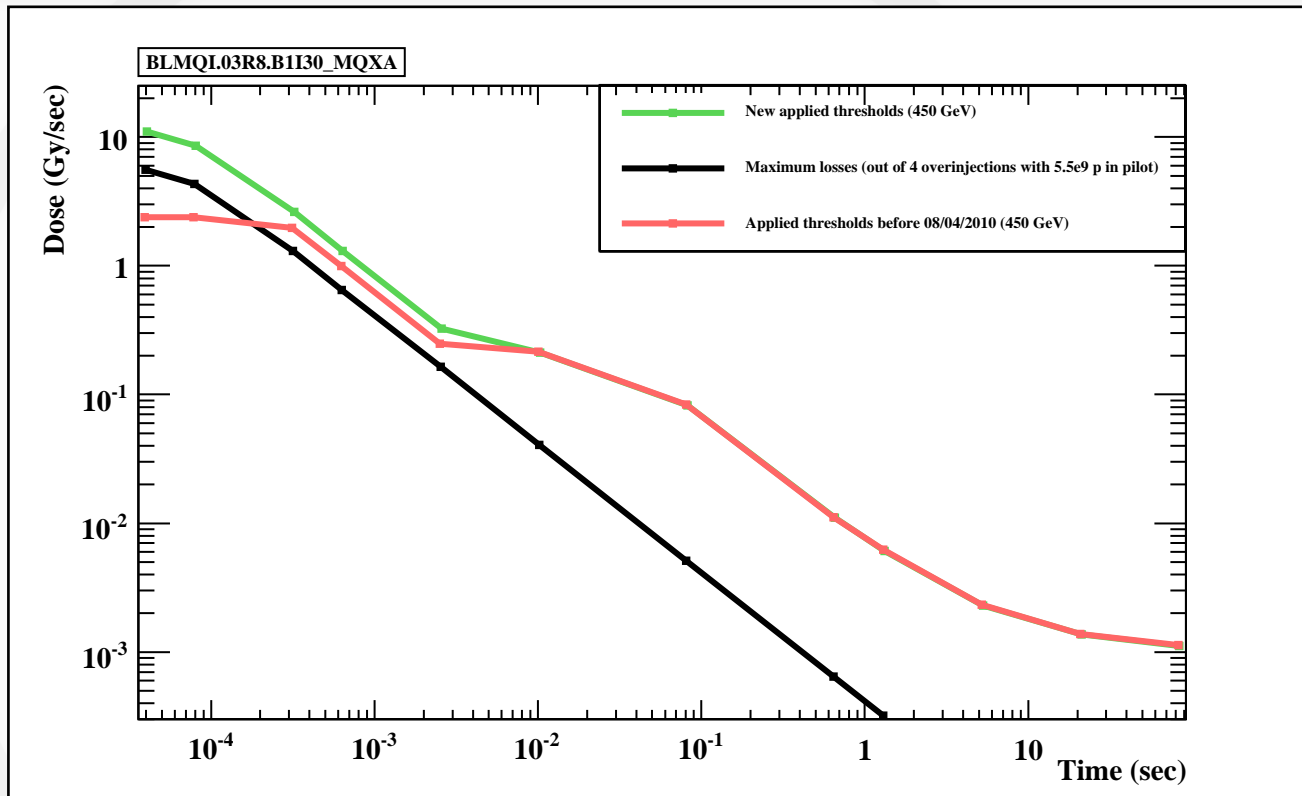


MQXA & MBXB thresholds @ overinjection

Annika Nordt for the BLM team

MPP meeting 16th of April 2010

MQXA Max. Losses vs. Thresholds

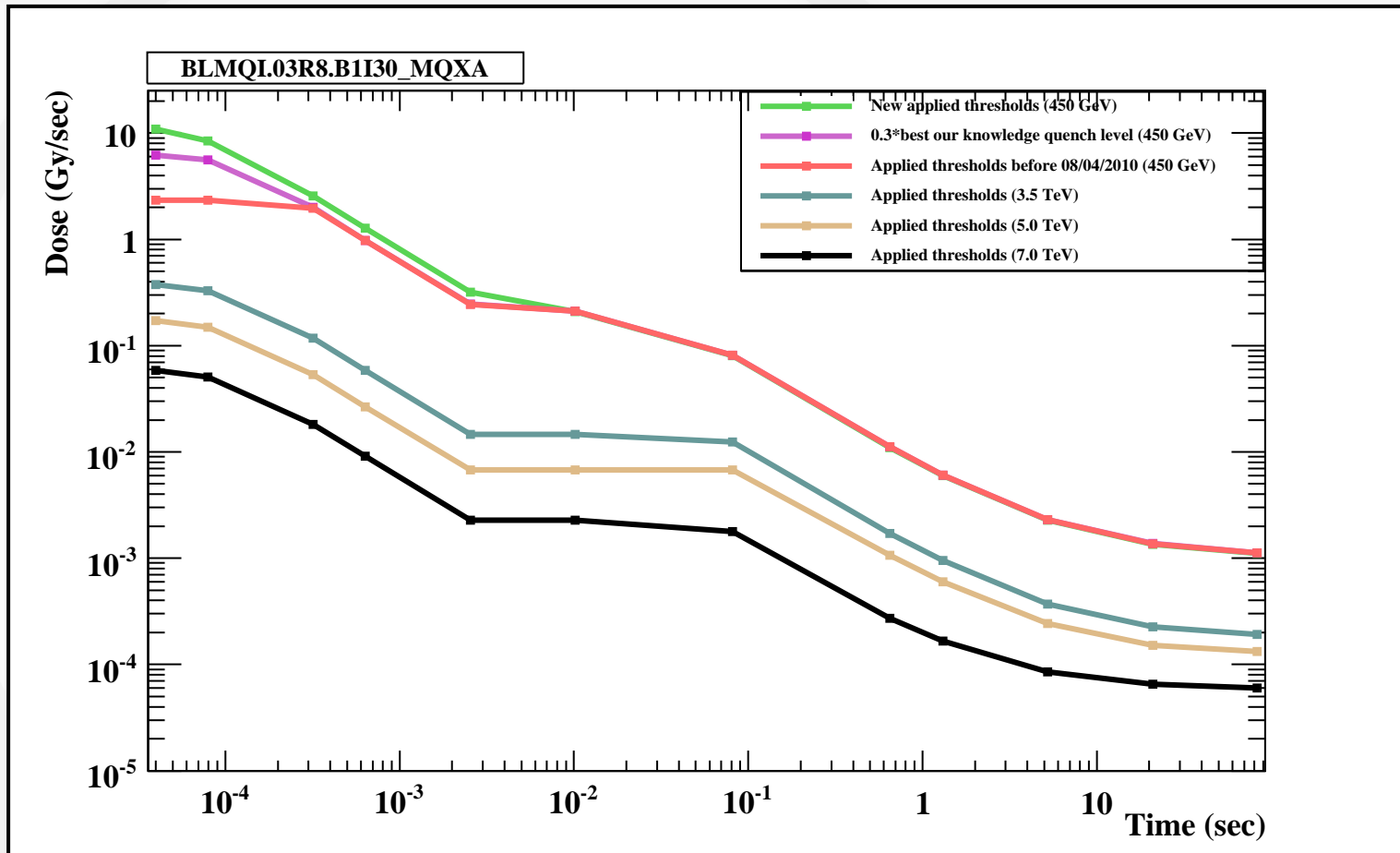


4 beam dumps during overinjections (B2) with 3-5.5e9 p in pilot at (local time):

- 1) 04.03.2010: 02:15:36
- 2) 04.03.2010: 02:21:02
- 3) 09.04.2010: 15:36:33
- 4) 09.04.2010: 15:52:32

New thresholds: 2 times over maximum losses

MQXA Thresholds



Old thresholds were reduced to keep monitor factor of 0.1 (new 0.5)

MQXA Values Summary

Time Window	Max Meas Loss ($I_{inj}=5.5e9$ p) in Gy/sec	Ap Thr before 8/4/10 in Gy/sec	FactorX (New Ap Thr= $X * \text{Max Meas Loss}$)	Quench L in Gy/sec	New Ap Thr in Gy/sec	Factor Y (New Ap Thr= $Y * \text{Quench L}$)
RS1 (40 μ s)	5.46	2.32 (6.1 if no el. limit)	2.0	20.3	10.92	0.54
RS2 (80 μ s)	4.21	2.32 (5.4 if no el. limit)	2.0	18.0	8.42	0.47
RS3 (320 μ s)	1.28	1.93	2.0	6.4	2.56	0.41
RS4 (640 μ s)	0.64	0.97	2.0	3.2	1.28	0.41
RS5 (2560 μ s)	0.16	0.24	2.0	0.8	0.32	0.38

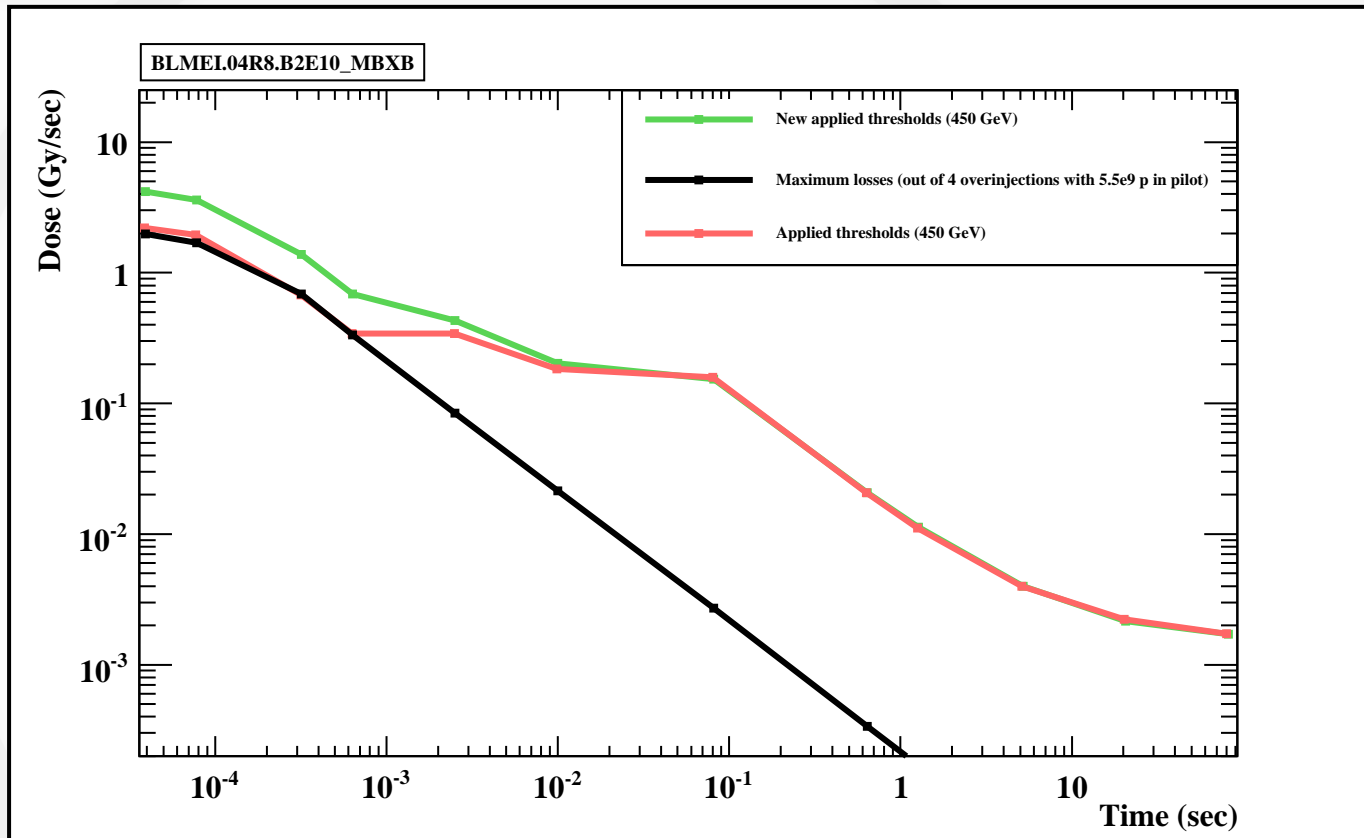
Old monitor factor = 0.1

New monitor factor = 0.5

Thresholds for energy level 1 (450 GeV) and energy level 2 (491 GeV) are the same for new applied thresholds

*Thresholds for all other energy levels and running sums stay unchanged
Thresholds a factor 1.8 below quench level (minimum)*

MBXB Max. Losses vs. Thresholds

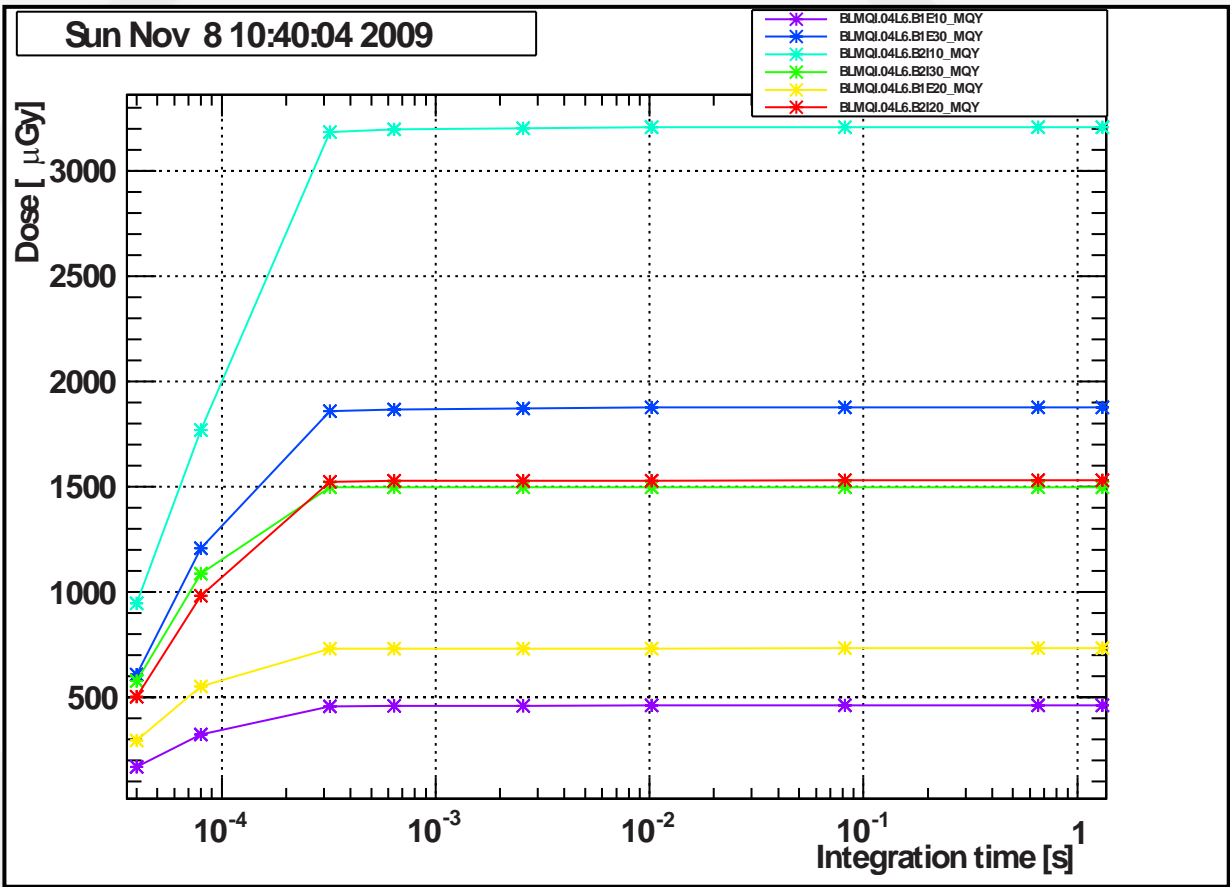


4 beam dumps during overinjections (B2) with 3-5.5e9 p in pilot at (local time):

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Signal levels for transient losses exactly modelled by threshold levels

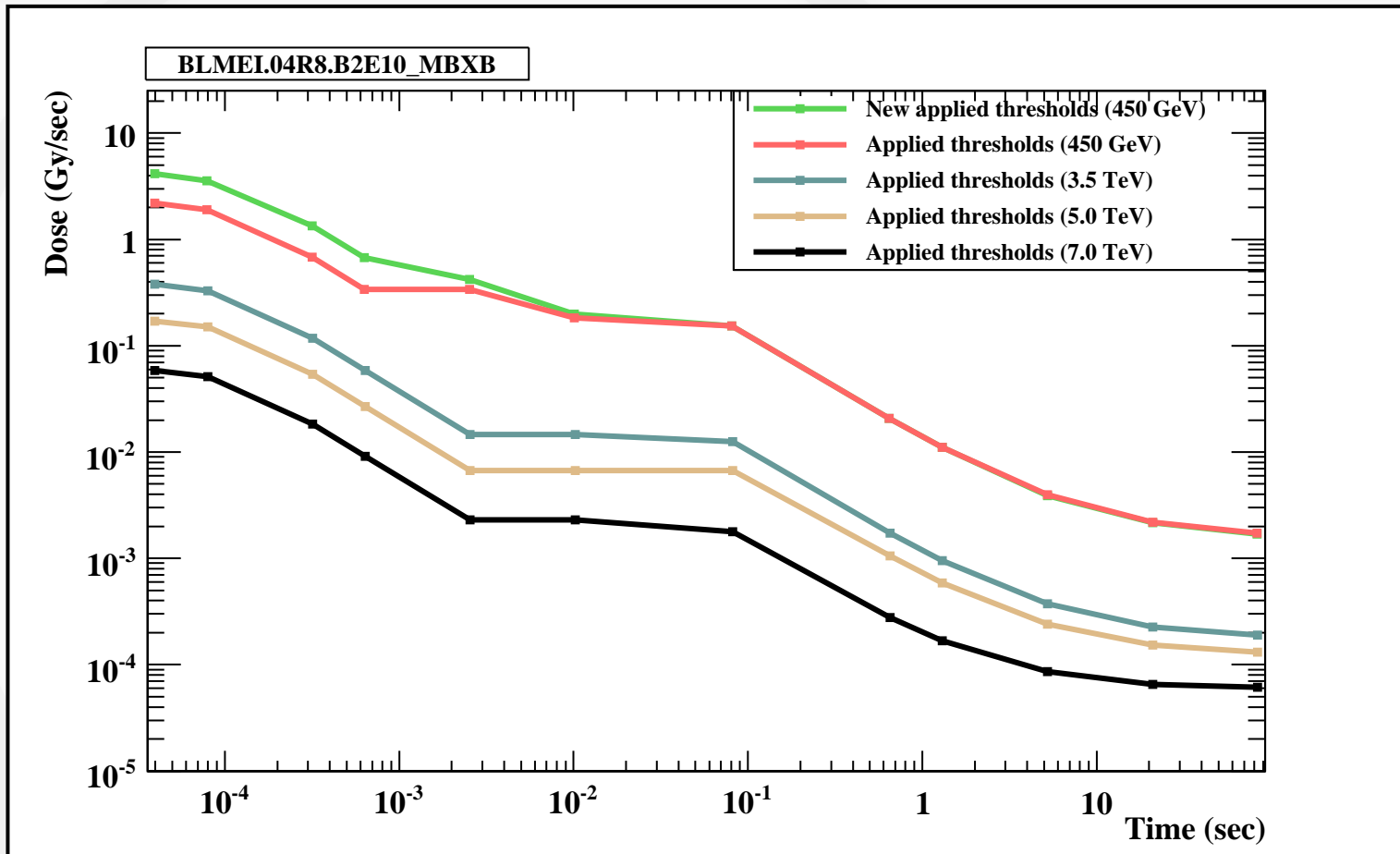
Ion Drift Velocity and Charge Collection



(Ch. Kurfuerst)

Increase of dose with integration time due to collection time of ions in the ionization chambers 99% of charges are collected at running sum RS03

MBXB Thresholds



MBXB Values Summary

Time Window	Max Meas Loss ($I_{inj}=5.5e9$ p) in Gy/sec	Ap Thr in Gy/sec	FactorX (New Ap Thr= $X \cdot \text{Max Meas Loss}$)	Quench L in Gy/sec	New Ap Thr in Gy/sec	Factor Y (New Ap Thr= $Y \cdot \text{Quench L}$)
RS1 (40 μ s)	1.95	2.13	1.9	7.1	4.08	0.57
RS2 (80 μ s)	1.64	1.86	2.1	6.2	3.50	0.57
RS3 (320 μ s)	0.67	0.67	2.0	2.2	1.34	0.61
RS4 (640 μ s)	0.33	0.33	2.0	1.1	0.66	0.60
RS5 (2560 μ s)	0.08	0.33	5.0	1.1	0.41	0.37

Old monitor factor = 0.1

New monitor factor = 0.2

Thresholds for energy level 1 (450 GeV) and energy level 2 (491 GeV) are the same for new applied thresholds

*Thresholds for all other energy levels and running sums stay unchanged
Thresholds a factor 1.8 below quench level (minimum)*