

Status of the Muon Veto

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Outline

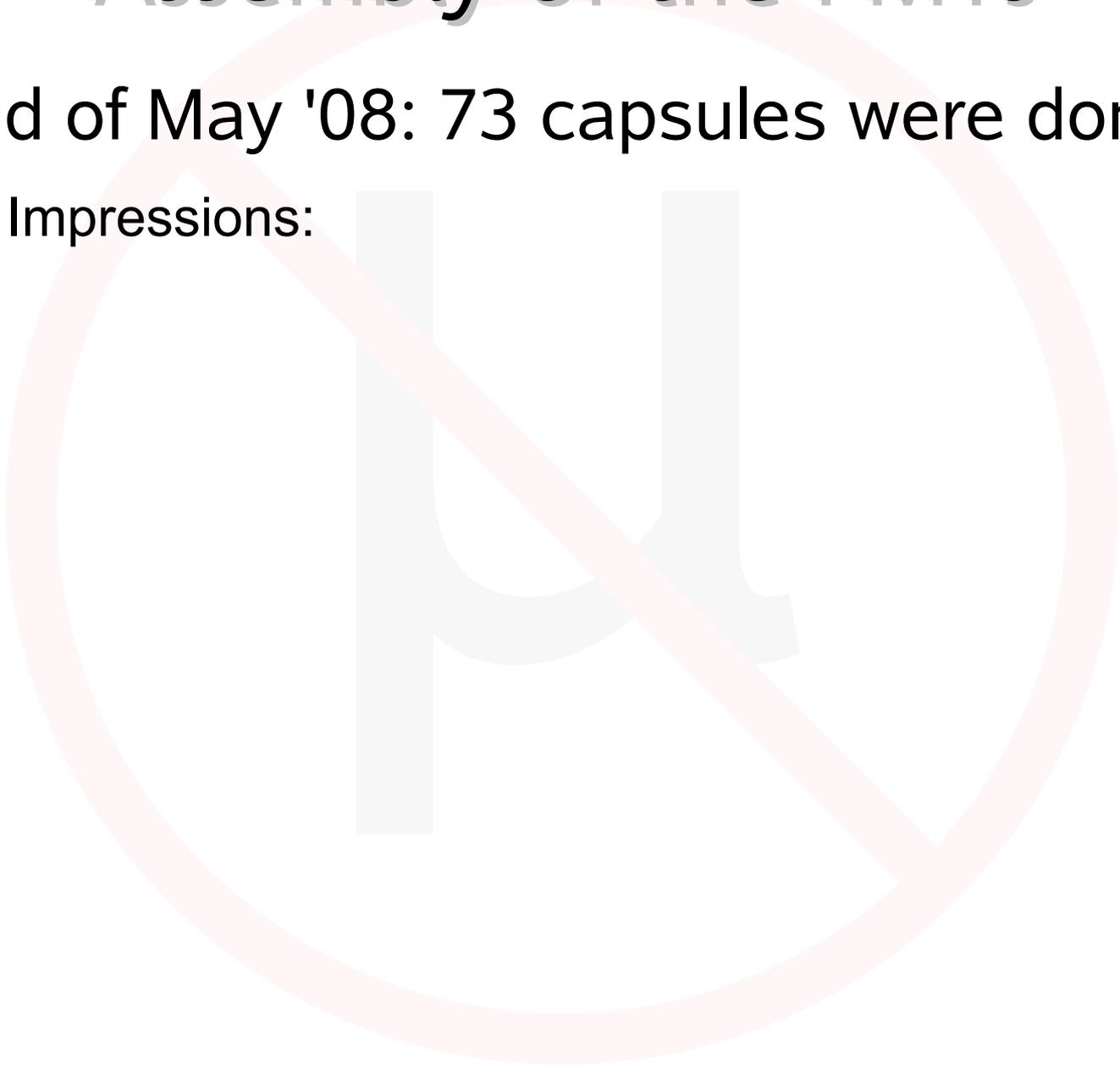
- Assembly of the PMTs
- Characterization
- Packing
- Mounting
- News from Monte Carlo
- Database
- Schedule



Assembly of the PMTs

End of May '08: 73 capsules were done.

Some Impressions:



Assembly of the PMTs

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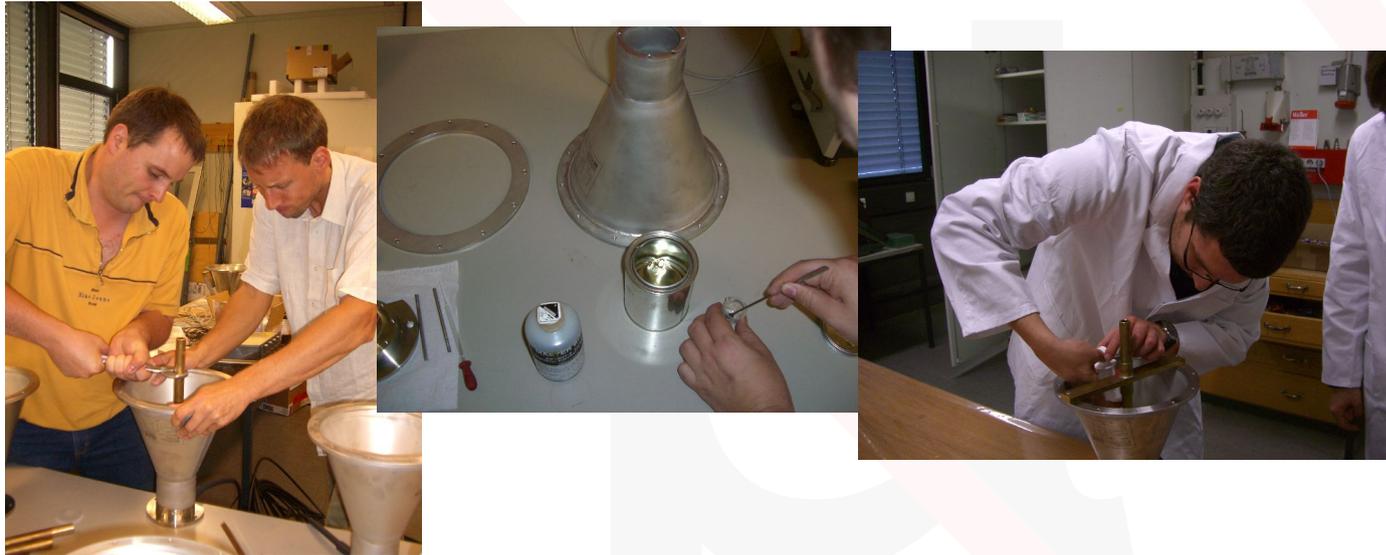
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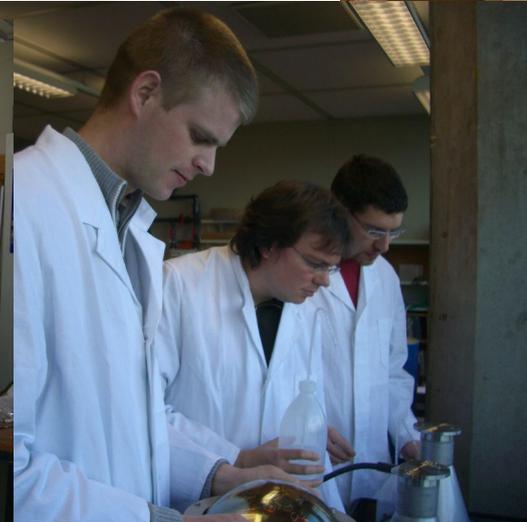
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Characterization

Characterization of most (51)
of the capsules is done.

average dark rate @ gain of $2 \cdot 10^7$: **~2.7 kHz**

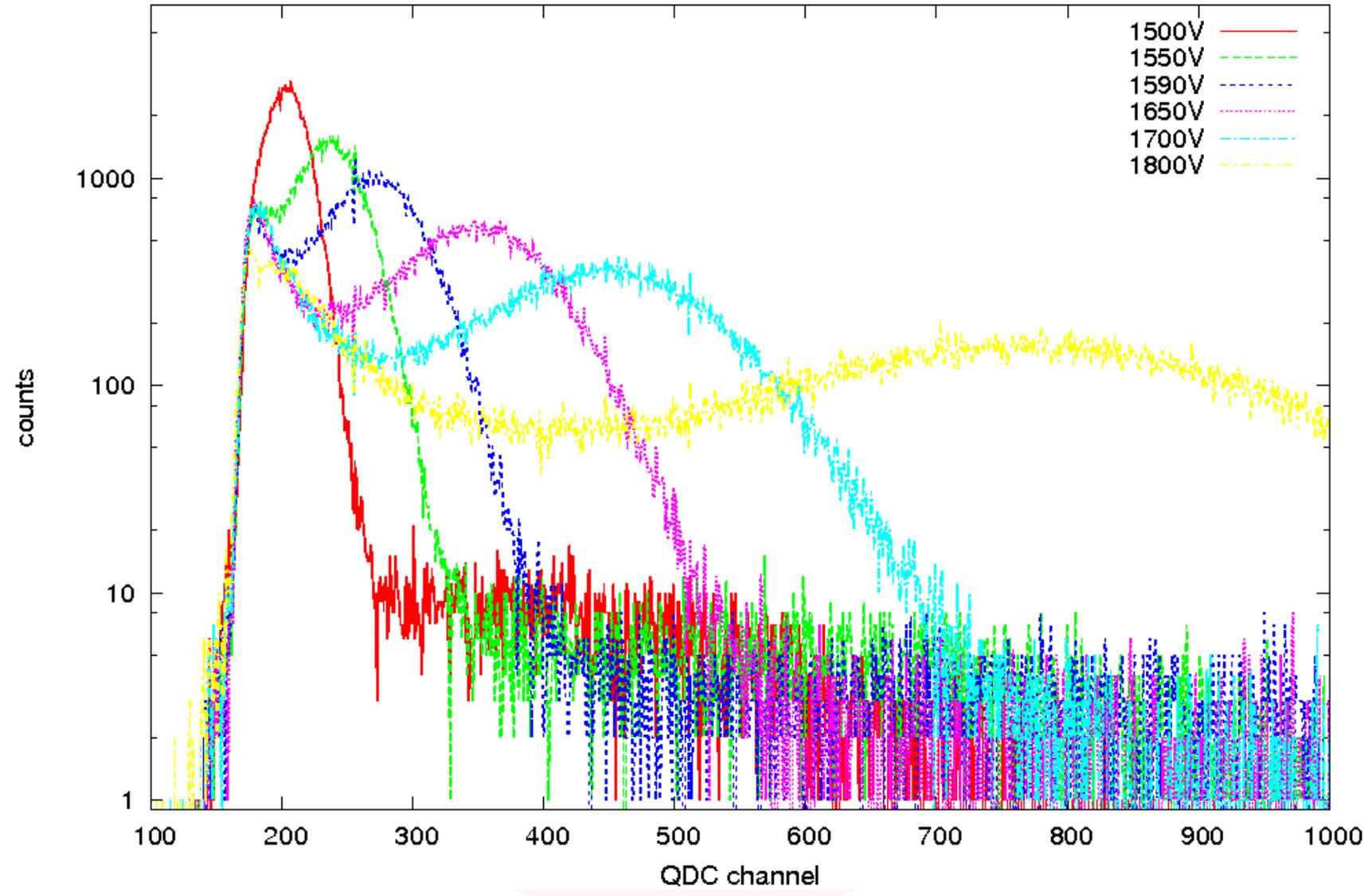
for random coincidences we assumed **5 kHz**

→ random rate decreases!



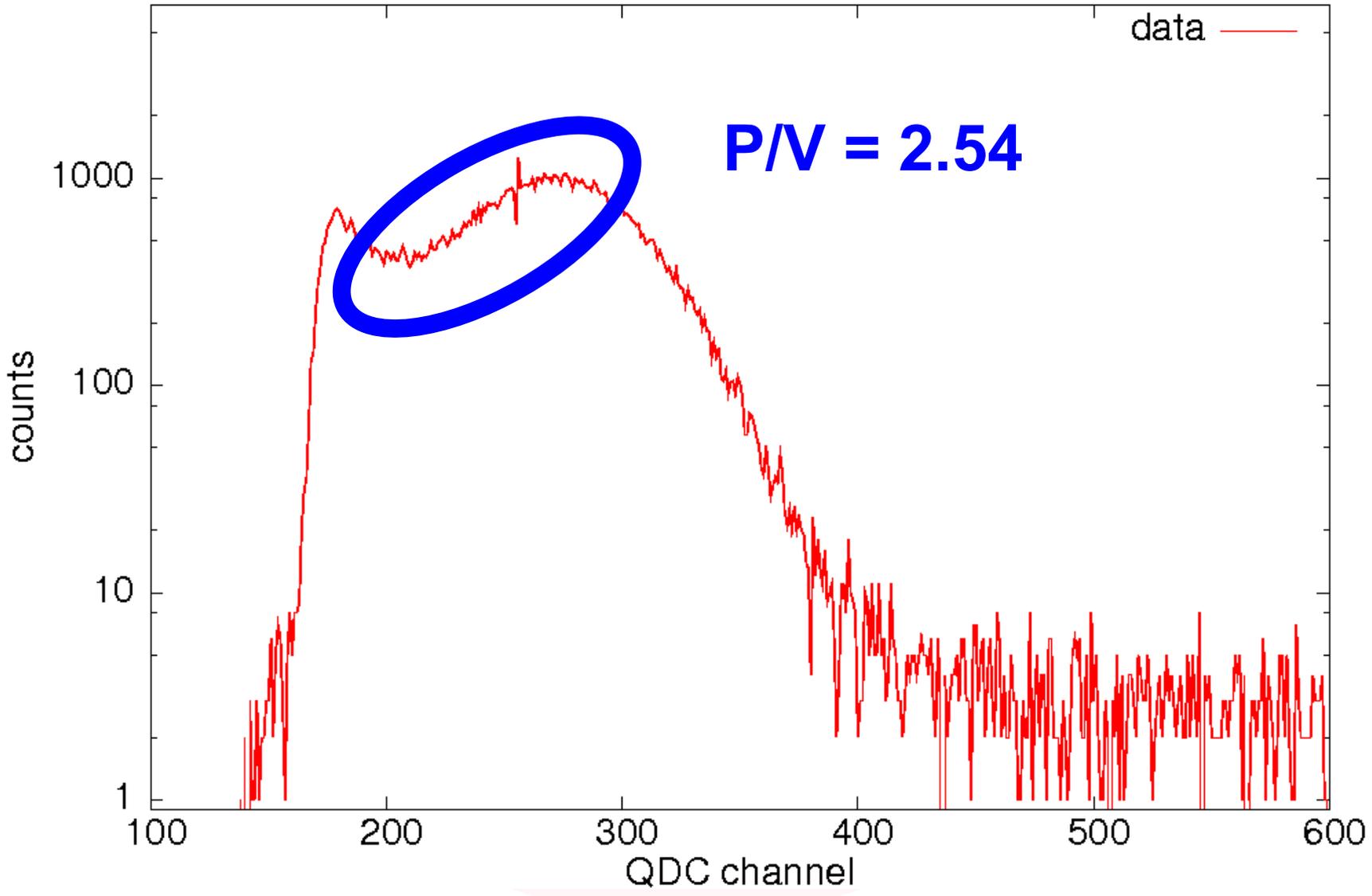
Characterization

Capsule 58



Characterization

Capsule 58 @ 1590V



Packing

- After Characterization, each capsule will be prepared for shipping (i.e. cleaned and packed)
- Start: direct after Meeting



Packing



Packing



Packing



Packing



Mounting

- driver license for hoisting platform
- 2 platforms ordered (delivery: ~ 20.11.)
- ca. 5 weeks / 5 people for mounting

missed talk of M. Knapp?

--> GSTR-08-024



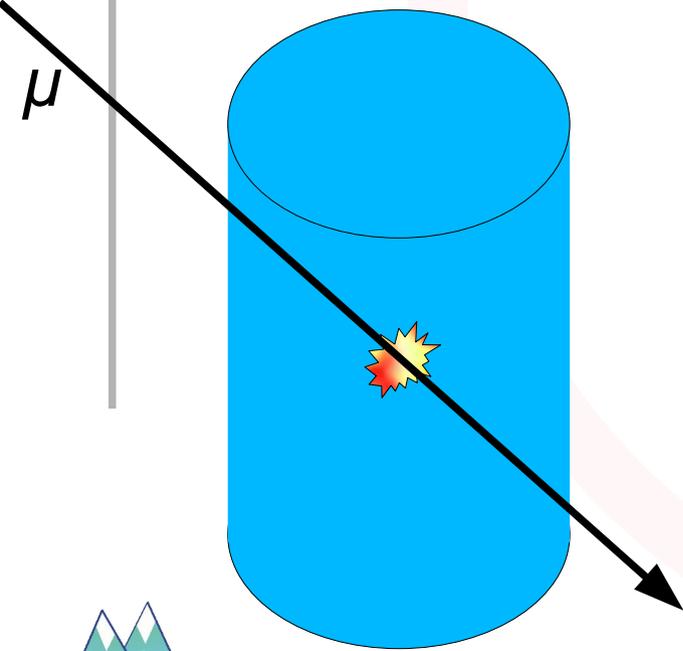
News from Monte Carlo

Old definition of very dangerous muons:

Muons with energy deposition around 2 MeV
and a single hit in crystal

Background: **$2 \cdot 10^{-6}$ counts/(keV kg year)**

New definition:



News from Monte Carlo

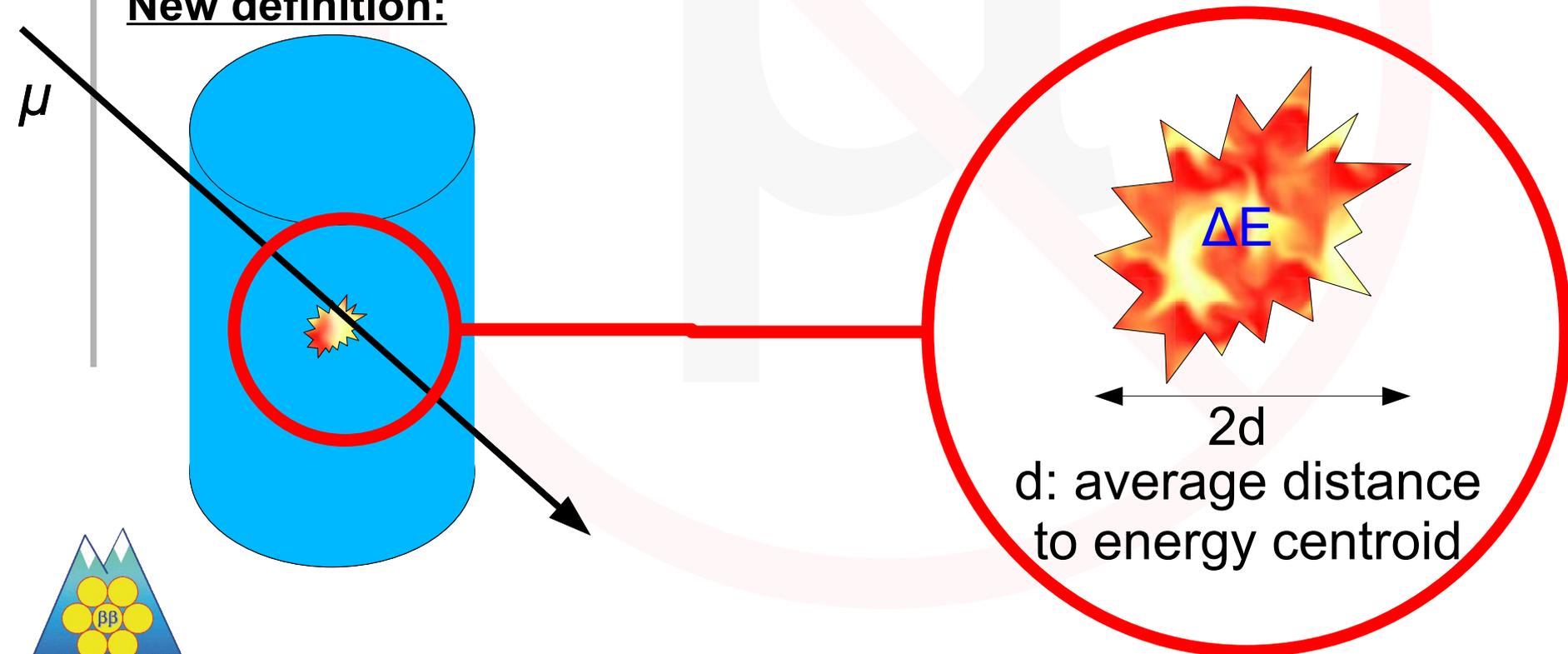
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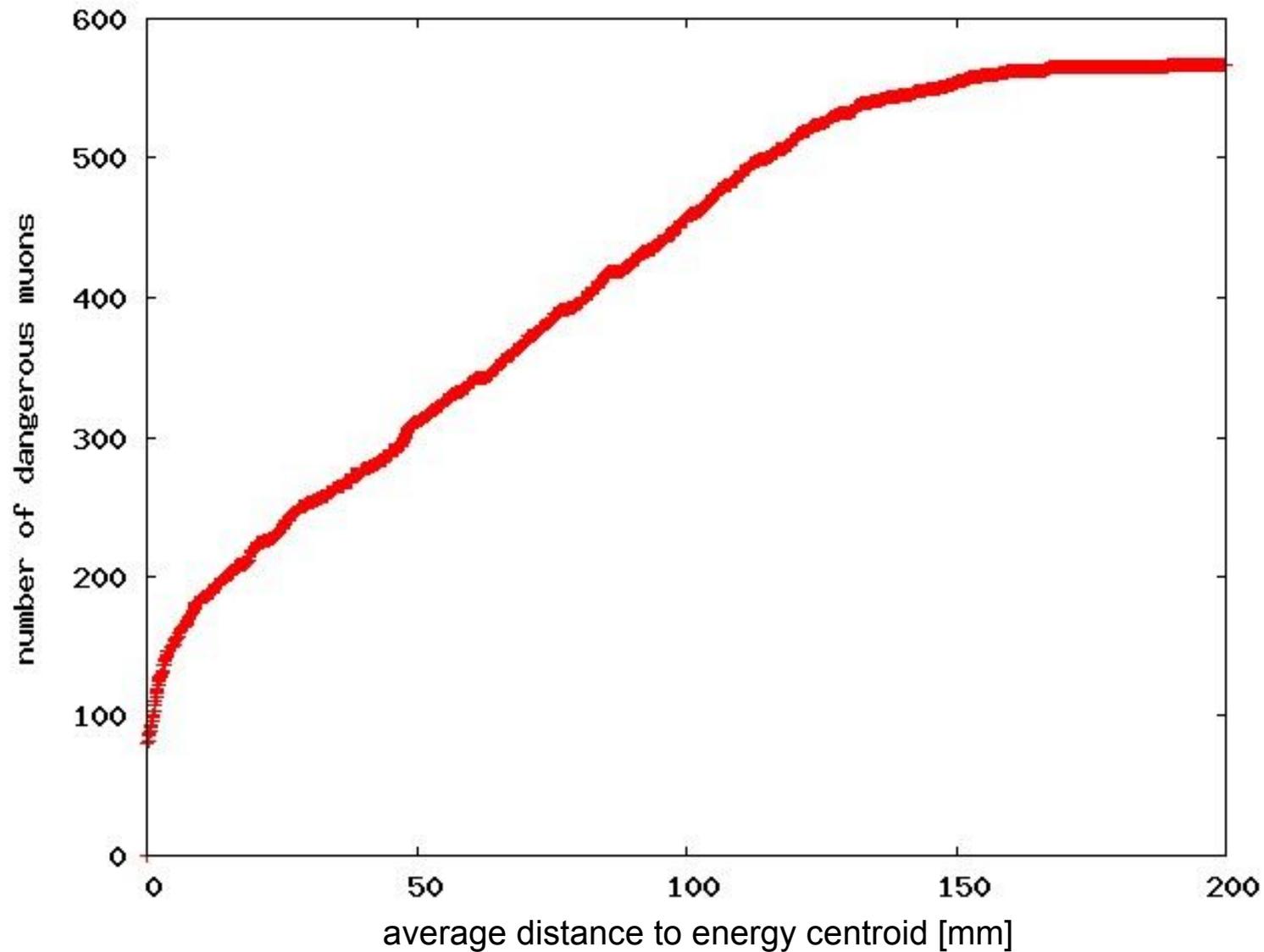
Background:

$2 \cdot 10^{-6}$ counts/(keV kg year)

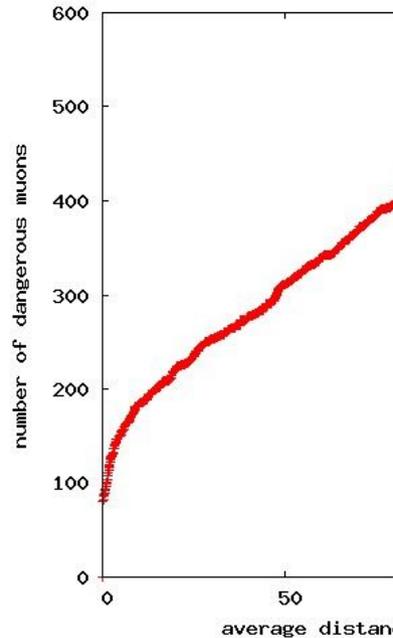
New definition:



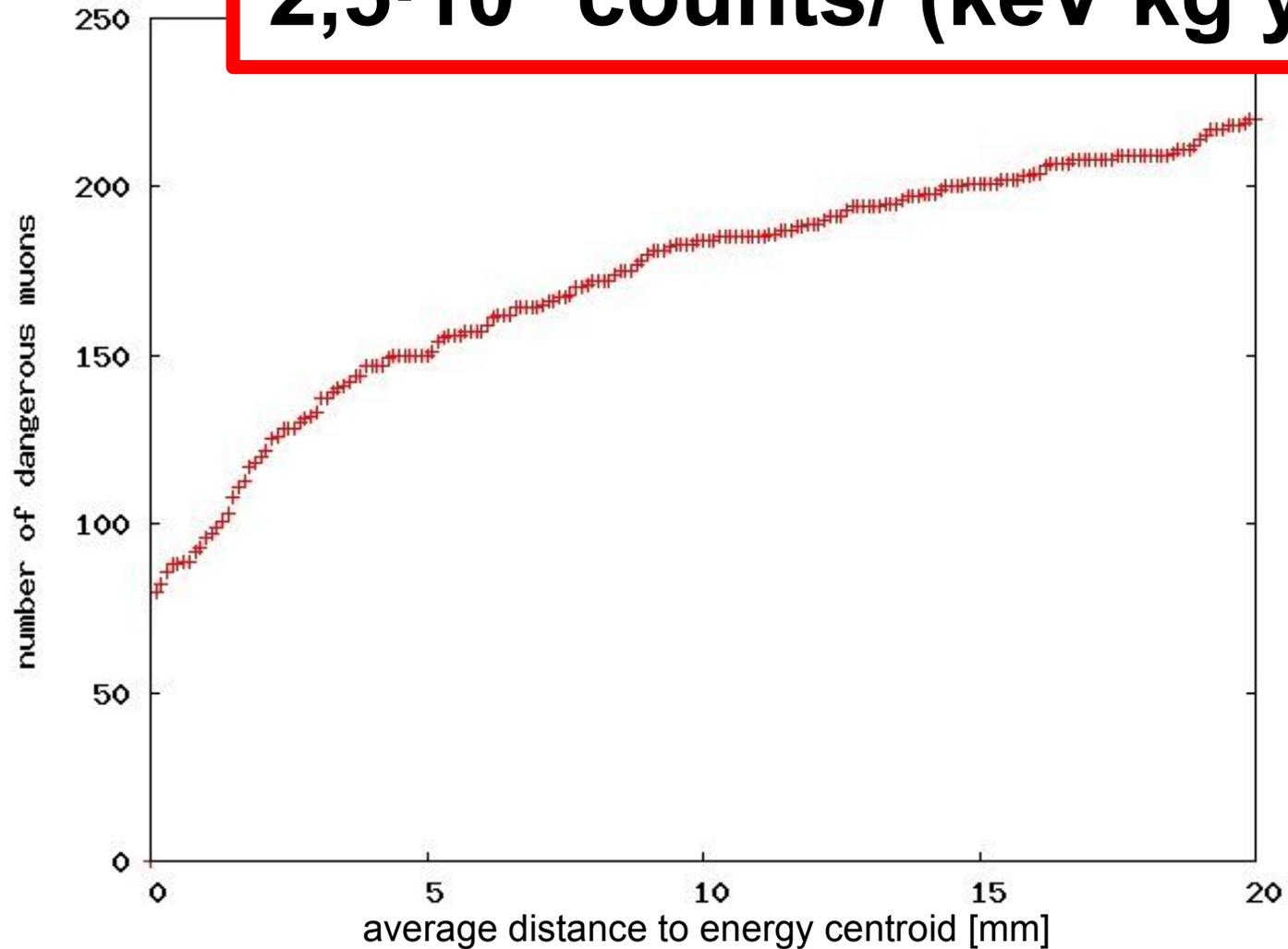
News from Monte Carlo



News from Monte Carlo



**New Background:
 $2,5 \cdot 10^{-3}$ counts/ (keV kg year)**



Database

- In preparation

including data from manufacturer of PMT, measured single-p.e. spectra during characterization, voltage @ gain of $2 \cdot 10^7$, location of capsule in the water tank...



Database

GERDA-Datenbank.ods - OpenOffice.org Calc

Datei Bearbeiten Ansicht Einfügen Format Extras Daten Fenster Hilfe

Albany AMT 12 80%

R62 = 1590

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Photomultiplier-Datenbank für das GERDA- Experiment																		
2																			
3																			
4	Typ	Serien-nummer	Kapsel-nummer	CB	CR	D1	Volts @ 5000 A / 1m [V]	D/C @ 5000 A / 1m [nA]	Volts @ 10000 A / 1m [V]	Volts @ 5*10⁷ Gain [V]	SER PV @ a=5*10⁷??	DCTS @ a=5*10⁷ [KCDs]	Total after pulse [%]	Länge PMT	Kommentar	Test	Bottom PMT	measured Volts @ 2*10⁷ Gain [V]	measured DCTS @ a=2*10⁷ [KCDs]
62	9350	9207	58	11,7	1,5	4,4	1512	53,2	1550	1540	2,200	3,000	2,560			yes	yes	1590	4951,06
63			59												Base kaputt				
64	9354	67	60	12,7	1,7	6,1	1289,000	4,000	1404,000	1335,000	1,600	5,400	5,475	27,8		yes		1880	2167
65	9354	5266	61	12,1	2,4	4,7	1191,000	1,500	1275,000	1205,000	2,100	1,300	4,144	27,8		yes	yes	1520	2790,23
66			62												Base kaputt				
67	9354	5496	63	12,1	1,9	6,4	1123,000	2,800	1197,000	1165,000	3,000	2,000	8,622	27,6		yes	yes	1460	1981,83
68	9354	5618	64	12,7	1,5	5,2	1437,000	1,600	1575,000	1440,000	2,300	0,700	2,652	27,8		yes	(yes)		1250,04
69			65												Base kaputt				
70	9354	5069	66	44,9	0,8	****	1425,000	13,000	1559,000	1446,000	1,770	3,600	5,338	27,7		yes	yes	1930	3032,85
71	9354	4667	67	11,1	0,7	****	1364,000	2,500	1482,000	1392,000	1,700	2,600	6,118	27,8		yes	yes		
72	9350	9186	68	11,3	1,9	6,1	1506	78,0	1570	1567	2,200	2,700	2,724			yes		1625	1104,57
73	9350	9202	69	12,4	2,4	7,8	1256	25,1	1275	1302	2,400	6,200	2,329			yes			
74	9350	9058	70	12,1	1,1	5,1	1675	46,0	1760	1742	2,000	8,300	3,188			yes		1790	1172,12
75	9354	5432	71	11,7	1,6	3,4	1241,000	0,600	1338,000	1250,000	1,600	0,990	2,573	27,7		yes			
76	9354	5781	72	11,5	1,4	3,7	1386,000	2,400	1534,000	1412,000	1,700	0,500	1,103	27,9		yes	(yes)	1890	806,93
77	9354	5309	73	12,4	1,4	2,2	1290,000	2,200	1396,000	1290,000	1,600	1,200	2,231	27,8		yes	yes	1615	831,93
78			74												Base kaputt				
79	9354	5918	75	10,7	0,5	3,4	1570,000	5,600	1748,000	1600,000	1,600	2,800	1,531	27,8		yes	yes	2100	652,78
80	9354	5209	76	12,8	1,7	3,3	1179,000	42,000	1268,000	1200,000	1,700	2,500	3,723	27,9		yes	yes	1500	2718,14
81	9354	63	77	12,1	1,8	4,7	1343,000	1,600	1475,000	1400,000	2,200	2,400	4,554	27,8		yes	yes	2080	2720,51

Tabelle 1 / 3 Standard 80% STD * Summe=1590



Schedule

- End of November: all capsules are packed,
Shipping to LNGS
- January?/February?: Mounting of capsules
(~ 5 weeks)



Thank you for your attention



