

LZ Update & Comparisons

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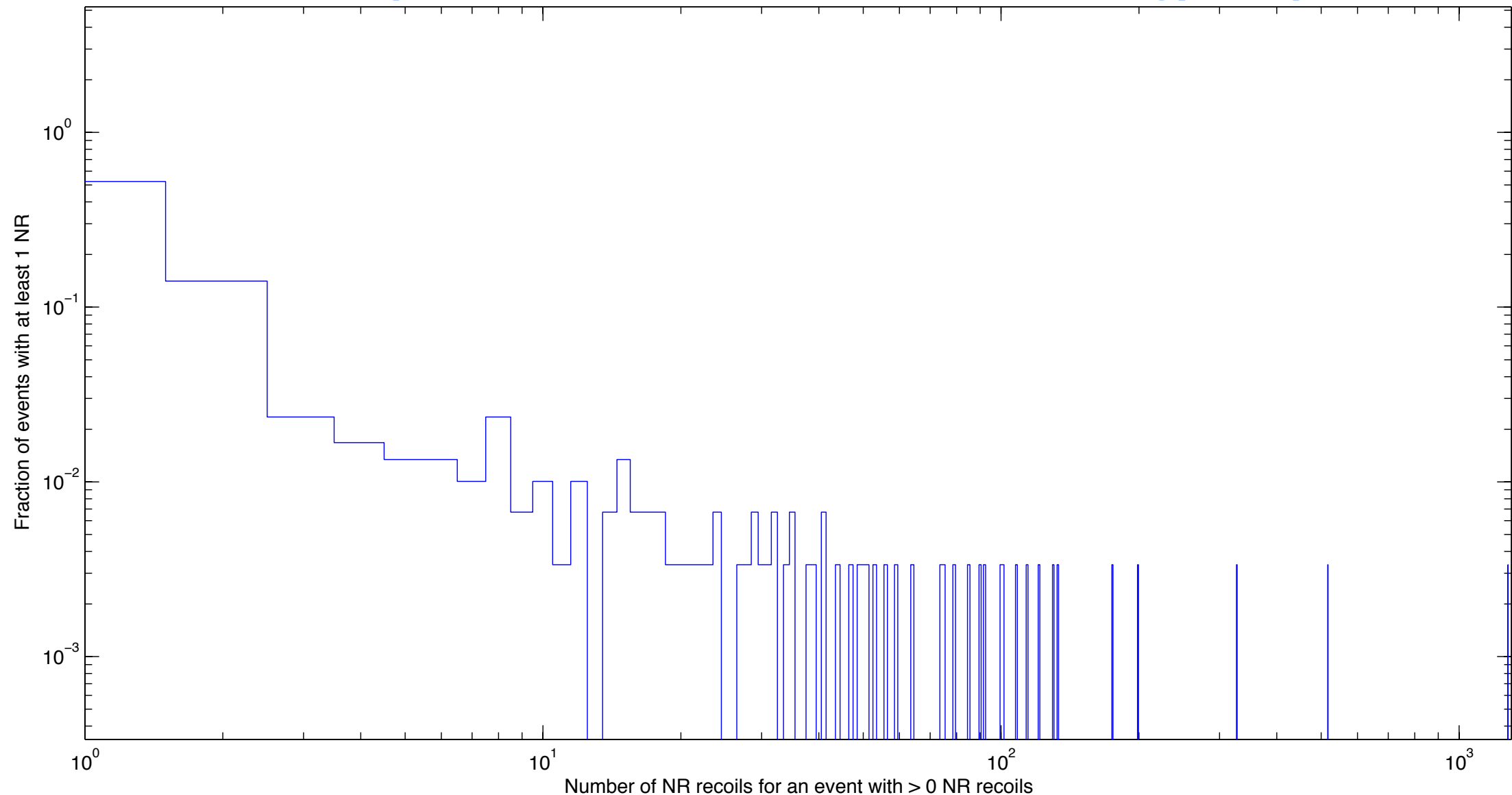
Comparisons

File Number	# mu top water (MP)	#mu top water (AR)	#n top water (MP)	# n top water (AR)	# of neutrons (MP)	# neutrons (AR)	#NR events (MP)	# NR det events (AR)	#nrs (energy cut > 0) (MP)	#nrs (no energy cut) (AR)
119	1146	1147	23	28	56	5	21	5	607	236
140	1101	1155	32	34	15	13	16	8	69	669
144	1169		15		6		18		372	
145	1230		29		63		18		818	
146	1129	1214	19	36	7	32	24	9	143	904
148	1146	1150	57	88	10	7	14	5	225	495
149	1169		65		34		27		261	
151	1135		20		30		16		358	
153	1140	1150	30	93	18	71	27	9	437	1937
161	1114	1160	47	40	13	22	21	7	179	1699
165	1160		29		34		18		266	
186	1146	1141	26	19	45	2	17	4	1401	80
187	1162		31		17		19		116	
204	1154	1114	36	35	4	96	17	8	28	127
214	1214	1138	18	23	61	13	25	5	627	587
215	1155	1104	29	87	20	19	19	4	313	316
average	1154.375	1147.3	31.625	48.3	27.0625	28	19.8125	6.4	388.75	705

Discrepancies with NR events and also the number of NRs

Events with at least 1 NR

NR defined as particle id > 10000 and energy deposition > 0



- 77% of these events have # NR per event < 10
- average driven by events with order of 100 NR

maybe compare these plots?

LZ Update

- 8.8 years of livetime analyzed so far (last update at 7.9 years)
- energy cuts on particles > 100 keV
- $NR > 5$ keVnr
- results consistent with previous iteration (at most 8%)

	Flux entering Tank	1000 day live
Muon entering water tank	1.76×10^{-5} mu/m ² /s	-
Neutron entering water	1.67×10^{-6} n/m ² /s	-
Neutrons entering Xe	9.5×10^{-6} n/m ² /s	-
NR/s	1.2×10^{-4}	~10000
Single Scatter NR/s**	1.1×10^{-8} (3 events still)	0.9

** no EM veto, fiducial cut, or muon veto