

SNO EXTRACTED CC SPECTRUM VALUES, TABULAR FORM
 (Accompanies Figure 2(b,c) of PRL submission)
 SNO Collaboration
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CC Bin Range (MeV)	Number of Extracted Events ($\pm 1\sigma$ stat. error)	Flux Ratio (relative to BP2001 ${}^8\text{B}$)	Systematic Error Range
6.75-7.26	151.32 ± 31.29	0.319 ± 0.066	0.318 - 0.376
7.26-7.78	181.73 ± 18.99	0.405 ± 0.043	0.336 - 0.358
7.78-8.29	109.38 ± 11.96	0.265 ± 0.029	0.336 - 0.358
8.29-8.81	133.95 ± 12.13	0.371 ± 0.033	0.334 - 0.360
8.81-9.32	101.23 ± 10.45	0.321 ± 0.033	0.330 - 0.364
9.32-9.84	80.18 ± 9.23	0.349 ± 0.041	0.326 - 0.368
9.84-10.35	56.84 ± 7.71	0.317 ± 0.043	0.321 - 0.373
10.35-10.87	53.58 ± 7.52	0.377 ± 0.053	0.314 - 0.380
10.87-11.38	41.85 ± 6.58	0.433 ± 0.068	0.305 - 0.389
11.38-11.90	20.95 ± 4.63	0.331 ± 0.073	0.296 - 0.398
11.90-19.50	35.07 ± 6.05	0.407 ± 0.070	0.254 - 0.440
Total CC	966.08 ± 56.21		
ES	107.23 ± 15.31		
neutrons	95.69 ± 48.31		

Table 1: SNO Extracted CC Spectrum from PRL paper. The first column is the kinetic energy range for each bin. The second column is the raw number of extracted CC events, with statistical errors. The third column shows the flux normalized to the BP2001 ${}^8\text{B}$ prediction, with statistical errors. The final column shows the size of the $\pm 1\sigma$ energy-correlated systematic error, represented as a band centered around a flux ratio of 0.347. This systematic error includes uncertainties in energy scale, energy resolution, and energy scale nonlinearities. Note that the total number of CC events from this unconstrained fit, 966.08 ± 56.21 , differs slightly from the number of fit CC events for signal extraction assuming a ${}^8\text{B}$ spectrum constraint, although the numbers agree well within statistics. The increased statistical error reflects the increased covariances between the CC and NC signals once the shape constraint is removed. See the accompanying table of statistical covariances. The statistical errors on the various CC bins should not simply be summed in quadrature, since there are covariances between different bins.

	CC1	CC2	CC3	CC4	CC5	CC6	CC7	CC8	CC9	CC10	CC11	ES	neutrons
CC1	1.000	0.557	0.296	0.080	0.017	0.001	-0.003	-0.003	-0.002	-0.001	-0.002	0.061	-0.882
CC2	0.557	1.000	0.216	0.062	0.017	0.004	0.000	0.000	0.000	0.000	0.000	-0.008	-0.628
CC3	0.296	0.216	1.000	0.039	0.014	0.006	0.003	0.003	0.002	0.001	0.002	-0.062	-0.331
CC4	0.080	0.062	0.039	1.000	0.010	0.007	0.004	0.005	0.003	0.001	0.003	-0.087	-0.087
CC5	0.017	0.017	0.014	0.010	1.000	0.006	0.004	0.005	0.003	0.001	0.003	-0.086	-0.015
CC6	0.001	0.004	0.006	0.007	0.006	1.000	0.003	0.004	0.002	0.001	0.002	-0.070	0.002
CC7	-0.003	0.000	0.003	0.004	0.004	0.003	1.000	0.003	0.001	0.001	0.002	-0.047	0.005
CC8	-0.003	0.000	0.003	0.005	0.005	0.004	0.003	1.000	0.002	0.001	0.002	-0.054	0.006
CC9	-0.002	0.000	0.002	0.003	0.003	0.002	0.001	0.002	1.000	0.000	0.001	-0.031	0.004
CC10	-0.001	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.000	1.000	0.000	-0.014	0.002
CC11	-0.002	0.000	0.002	0.003	0.003	0.002	0.002	0.002	0.001	0.000	1.000	-0.035	0.004
ES	0.061	-0.008	-0.062	-0.087	-0.086	-0.070	-0.047	-0.054	-0.031	-0.014	-0.035	1.000	-0.114
neutrons	-0.882	-0.628	-0.331	-0.087	-0.015	0.002	0.005	0.006	0.004	0.002	0.004	-0.114	1.000

Table 2: Covariance Matrix for the extracted SNO CC spectrum. The 13×13 statistical covariance matrix is shown for all of the extracted event totals from the unconstrained signal extraction. Note that because common backgrounds (neutrons and ES events) are subtracted from all of the CC bins, *the various CC bins are not statistically independent*. The covariances between CC bins are only significant for the first few bins, where most of the extracted neutrons reside.