

Erratum: Measurement of the $^{70}\text{Ge}(n, \gamma)$ cross section up to 300 keV at the CERN n_TOF facility [Phys. Rev. C **100**, 045804 (2019)]

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An error was discovered in the neutron flux used to normalize the $^{70}\text{Ge}(n, \gamma)$ data. The same error affects data in Ref. [1] and a separate correction will be published. Updated resonance kernels are printed in Tables I and II. Systematic uncertainties in the capture kernels are 3.2% below and 5.1% above 10 keV neutron energy. Analysis of the (updated) resonance parameters under the same assumptions as in Ref. [1] yield the average resonance parameters $\langle \Gamma_\gamma \rangle = 200(12)$ meV with $\sigma_{\Gamma_\gamma} = 62(8)$ and $D_0 = 1400(200)$ eV, where $\langle \Gamma_\gamma \rangle$, σ_{Γ_γ} , and D_0 are expectation value of s -wave radiation width, standard deviation of the distribution of Γ_γ and s -wave resonance spacing, respectively. The difference in D_0 does not come from use of correct flux. We found a bug in the code used for determination of D_0 of ^{70}Ge . The corrected unresolved cross section from 25–300 keV is shown in Fig. 1. The correction of the flux mainly affects the data at high neutron energy above 100 keV where now our data are in better agreement with the ENDF/B-VIII evaluation [3] and previous results from Walter and Beer [2]. Systematic uncertainties of the unresolved cross section are 6.7%. The Maxwellian averaged cross sections (MACS) are shown in Table III. Above the experimental limit of 300 keV, we used the ENDF/B-VIII cross section for our MACS calculations, assuming a 20% uncertainty. Changes in the MACS values remain below 6%, therefore, our astrophysical considerations remain largely unchanged. It should be noted that the agreement between our results and Kadonis-1.0 [4] is now excellent. We apologize for any inconvenience this caused. The corrected results will be provided to the EXFOR database.

TABLE I. Resonance energies E_R and kernels k up to 25 keV determined with SAMMY. The uncertainties listed are from the fitting procedure.

E_R (eV)	k (meV)	E_R (eV)	k (meV)
152.39 ± 0.01	0.059 ± 0.002	12655.8 ± 0.3	132.5 ± 4.6
1118.4 ± 0.1	160.7 ± 4.9	13266.4 ± 5.6	192 ± 33
1474.26 ± 0.01	152.0 ± 1.1	13326.3 ± 0.4	164.6 ± 7.0
1484.12 ± 0.02	11.2 ± 0.2	13867.0 ± 0.5	182.9 ± 9.2
1514.21 ± 0.02	24.1 ± 0.3	13889.0 ± 0.8	40.9 ± 3.9
1953.11 ± 0.02	29.3 ± 0.6	14331.8 ± 0.5	112.0 ± 5.3
2358.51 ± 0.06	7.3 ± 0.2	14800.4 ± 0.8	111.8 ± 5.7
2652.81 ± 0.07	9.6 ± 0.3	15118.0 ± 1.0	27.0 ± 2.8
3170.24 ± 0.04	45.3 ± 0.8	15705.4 ± 0.8	210.2 ± 9.1
3224.01 ± 0.05	23.1 ± 0.5	16005.8 ± 0.4	297.2 ± 9.5
3846.2 ± 0.1	11.3 ± 0.4	16366.3 ± 0.5	212.9 ± 12
3853.7 ± 0.3	3.4 ± 0.3	16402.7 ± 0.7	129.1 ± 6.9
4290.38 ± 0.05	58.4 ± 1.0	16900.8 ± 0.5	156.7 ± 8.4
4397.9 ± 0.1	188.9 ± 2.7	17032.2 ± 0.6	247.6 ± 16
5157.0 ± 0.3	4.9 ± 0.4	17357.7 ± 0.4	180.1 ± 9.3
5530.9 ± 0.1	40.2 ± 1.2	17706.2 ± 1.0	37.6 ± 3.5
5605.5 ± 0.5	294.5 ± 7.5	17936.7 ± 1.2	30.3 ± 3.7
6035.4 ± 0.1	39.9 ± 1.2	18616.7 ± 3.2	185 ± 14
6590.8 ± 0.3	16.9 ± 1.0	18963.8 ± 0.7	347 ± 32
6797.2 ± 0.3	236.6 ± 5.1	19318.8 ± 0.4	229.9 ± 9.4
7259.7 ± 0.1	114.9 ± 4.2	19654.1 ± 0.8	219.3 ± 8.7
7590.7 ± 0.2	91.3 ± 3.7	19809.3 ± 0.5	185.2 ± 5.9
7669.1 ± 0.2	35.7 ± 1.5	20124.0 ± 1.7	35.1 ± 4.8
8289.1 ± 0.1	148.9 ± 5.5	20271.7 ± 0.7	244 ± 11
8664.0 ± 0.6	37.0 ± 2.8	20714.6 ± 0.9	129.7 ± 7.0
8702.3 ± 1.5	227.4 ± 9.9	20883.1 ± 1.1	59.4 ± 5.2
8723.8 ± 0.4	68.3 ± 4.8	21666.8 ± 3.9	117 ± 13
9395.8 ± 0.2	139.5 ± 3.9	21698.3 ± 1.0	106 ± 13
9959.5 ± 1.8	226 ± 11	22275.9 ± 0.7	232 ± 15
10018.4 ± 0.4	51.6 ± 3.1	22736.2 ± 2.2	205 ± 12
10118.2 ± 0.3	40.2 ± 2.1	23128.4 ± 0.9	174 ± 10
10377.5 ± 1.6	290 ± 10	23556.1 ± 1.4	61.8 ± 6.1
10504.6 ± 0.2	213.1 ± 5.9	23776.0 ± 1.2	135.9 ± 9.0
11648.6 ± 0.6	23.3 ± 2.0	23916.6 ± 0.9	373 ± 16
11838.5 ± 0.4	191.9 ± 6.4	24068.5 ± 4.0	172 ± 21
12309.5 ± 0.4	36.0 ± 2.7	24684.2 ± 0.9	278 ± 13
12399.2 ± 0.3	240.3 ± 9.4		

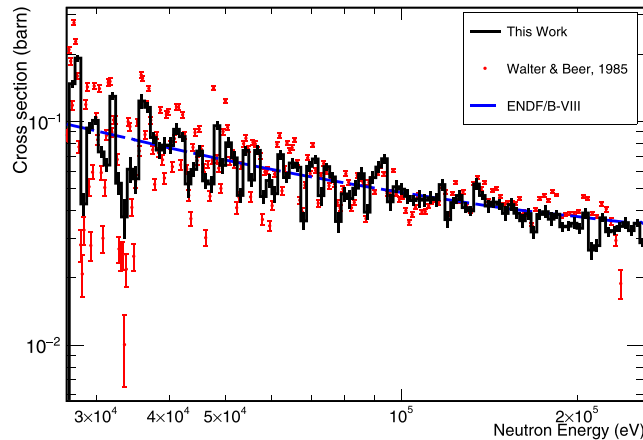


FIG. 1. Neutron capture cross section with statistical uncertainties in the unresolved resonance region from 25 to 300 keV. The data obtained in this Erratum are compared to experimental results by Walter and Beer [2] and the ENDF/B-VIII evaluation [3].

TABLE II. Resonance energies E_R and kernels k from 25 keV determined with SAMMY. The uncertainties listed are from the fitting procedure. Some of these resonances may be more complex structures, which could not be separated due to the worsening of the experimental resolution and the increasing natural resonance widths.

E_R (eV)	k (meV)	E_R (eV)	k (meV)
25012.4 ± 1.3	105.7 ± 7.8	32545.7 ± 2.2	92 ± 11
25347.5 ± 0.8	278 ± 15	32768.9 ± 4.0	72.6 ± 9.7
25657.4 ± 1.5	60 ± 16	34382.9 ± 2.5	206 ± 20
25856.9 ± 2.4	87.7 ± 9.7	34659.6 ± 2.6	92 ± 14
26051.9 ± 7.5	307 ± 32	35251 ± 11	137 ± 22
26670.6 ± 1.1	332 ± 16	35606.2 ± 1.3	268 ± 94
26925.7 ± 2.4	97 ± 10	35933.6 ± 5.0	70 ± 17
27263.7 ± 0.9	488 ± 49	36201.9 ± 2.3	335 ± 62
27706.4 ± 1.1	316 ± 17	36266.3 ± 3.1	280 ± 21
27893.2 ± 2.8	460 ± 24	36610.4 ± 7.7	42 ± 16
28137.9 ± 2.5	232 ± 18	37032.2 ± 7.7	138 ± 28
29161.9 ± 2.7	414 ± 19	37184.1 ± 4.1	239 ± 29
30035.6 ± 1.4	290 ± 15	37516.2 ± 2.9	324 ± 44
30296.1 ± 2.5	158 ± 12	37865.6 ± 2.6	180 ± 21
30666.4 ± 1.4	306 ± 15	38344.3 ± 8.8	132 ± 22
31626.1 ± 2.3	78 ± 11	38511.9 ± 3.5	155 ± 15
31845.7 ± 1.5	278 ± 21	38988.0 ± 6.8	414 ± 56
32047.3 ± 2.2	168 ± 14	39872.8 ± 3.0	222 ± 24
32415.1 ± 5.7	154 ± 19		

TABLE III. Maxwellian averaged cross sections obtained from resonance data below, and averaged cross sections above 25 keV neutron energy. The uncertainty is the total uncertainty, including systematic and statistical uncertainties.

kT (keV)	MACS (mb)		
	This Erratum	Kadonis-1.0 [4]	Walter and Beer [2]
5	213.3 ± 10.7	207.3	
10	153.6 ± 7.7	154.8	
20	109.4 ± 5.3	109.8	112 ± 6
30	89.3 ± 4.7	89.1 ± 5.0	92 ± 5
40	77.5 ± 4.4	77.1	81 ± 5
50	69.5 ± 4.1	69.3	75 ± 4
60	63.7 ± 3.9	63.7	
70	59.4 ± 3.7		
80	56.0 ± 3.5	56.2	
90	53.2 ± 3.3		
100	51.0 ± 3.3	51.4	

[1] C. Lederer-Woods *et al.* (the n_TOF Collaboration), *Phys. Lett. B* **790**, 458 (2019).

[2] G. Walter and H. Beer, *Astron. Astrophys.* **142**, 268 (1985).

[3] D. A. Brown *et al.*, *Nucl. Data Sheets* **148**, 1 (2018).

[4] The Karlsruhe Astrophysical Database of Nucleosynthesis in Stars 1.0 (test version), online at <https://exp-astro.de/kadonis1.0/>, latest release KADoNiS-0.3; I. Dillmann, M. Heil, F. Käppeler, R. Plag, T. Rauscher, and F. K. Thielemann, in *Capture Gamma-Ray Spectroscopy and Related Topics: 12th International Symposium, September 2005, Notre Dame, Indiana*, edited by A. Woehr and A. Aprahamian, AIP Conf. Proc. 819 (AIP, New York, 2006), p. 123.