^{170}Er(p,t) 2006Bu09,1985Bu19

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 111, 1807 (2010)	15-Jun-2010

Others: 1973Oo01, 1985Mi06.

2006Bu09: E=25.0 MeV; 98% enriched ^{170}Er target; Q3d spectrograph (FWHM=4-6 keV); θ(lab)=5°, 10°, 14°, 17.5°, 23°, 30°, 37.5°; measured E(t), $\sigma(\theta)$; DWBA analysis. See also 2005Me19, 2006Me13, 2007Bu25.

1985Bu19: E(p)=18 MeV, θ=6° to 75° (15 angles); metallic Er targets enriched to 96.89% in ^{170}Er; measured E(level) (mag spect, FWHM=10-15), angular distributions, differential cross sections.

1973Oo01, using natural Er and E(p)=19 MeV, report possible states in ^{168}Er at 3016, 3057, and 3100.

^{168}Er Levels

E(β),L(β) weakly excited state (2-3 μb/sr At 5°) with forward-peaked $\sigma(\theta)$, inconsistent with expectation for L>0; possibly L=0, but shape is atypical for L=0 (2006Bu09).

E(level)†	L‡	dσ/dΩ(14°) μb/sr#	Comments
0.0	0		dσ/dΩ(5°)=693 *10* μb/sr (2006Bu09).
79.8 *1*	2	126 *2*	
265@ *1*			
549@ *1*			
821.2 *1*	2	24.9 *4*	
895@ *1*			
995@ *1*			
1192@ *1*			
1217.1 *1*	0		dσ/dΩ(5°)=10.4 *5* μb/sr (2006Bu09).
1276.3 *1*	2	2.6 *2*	E(level): 1272 *1* In 1985Bu19.
1358@ *1*			
1421.9 *2*	0		dσ/dΩ(5°)=9.5 *5* μb/sr (2006Bu09).
1432&			
1448@ *1*			
1493.2 *1*	2	6.0 *5*	
1572@ *2*			
1631@ *2*			
1654@ *2*			
1736@ *2*			
1785@ *2*			
≈1820@			
1833.7 *2*	0		dσ/dΩ(5°)=6.7 *4* μb/sr (2006Bu09).
1848.2 *2*	2	3.7 *2*	
1893.0 *2*	2	1.4 *1*	
1913@ *3*			
1930.1 *3*	2	0.6 *1*	
1952.2 *7*	2	0.7 *1*	E(level): 1957 *3* In 1985Bu19.
≈2081@			
2114.1 *4*	0		dσ/dΩ(5°)=2.1 *2* μb/sr (2006Bu09).
2174.0			E(level),L: $\sigma(\theta)$ is structureless (2006Bu09) so level differs from known (2^+) 2178 level.
2193.0 *1*	2	15.3 *4*	
2200.6 *4*	0		dσ/dΩ(5°)=0.75 *14* μb/sr (2006Bu09).
2239@ *4*			

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^{170}Er(p,t) 2006Bu09,1985Bu19 (continued)

^{168}Er Levels (continued)

E(level)[†]	L[‡]	dσ/dΩ(14°) μb/sr[#]	Comments
2265[@] *4*			
2280[@] *4*			
2322.2 *2*	2	11.14 *26*	E(level),L: clean L=2 angular distribution, so this level differs from the known 3$^-$ 2323 level (2006Bu09).
2341[@] *4*			
2349.3 *3*	2	15.9 *3*	
2366.2 *2*	0		E(level): 2373 *4* In 1985Bu19. dσ/dΩ(5°)=17.4 *6* μb/sr (2006Bu09).
2392.1 *2*	(0)		dσ/dΩ(5°)=5.2 *3* μb/sr (2006Bu09). σ(θ) May Be affected by unresolved 2$^+$ level known At 2393.6 keV (2006Bu09).
2424.1 *2*	2	7.5 *2*	dσ/dΩ(14°) μb/sr: σ(θ) suggests presence of some unknown contribution so this dσ/dΩ represents an upper limit (2006Bu09).
2450.5? *3*	2	4.4 *2*	
2461.8 *2*	2	5.6 *2*	
2538.2 *3*	2	1.3 *3*	
2552.2 *3*	2	2.6 *2*	
2572.5 *2*	0		dσ/dΩ(5°)=78.6 *12* μb/sr (2006Bu09).
2617.4 *2*	0		dσ/dΩ(5°)=43.0 *17* μb/sr (2006Bu09).
2644.1 *6*	(0)		dσ/dΩ(5°)=3.2 *4* μb/sr (2006Bu09).
2683[&]			
2741.9 *4*	2	12.9 *5*	
2746[&]			
2789.2 *4*	0		dσ/dΩ(5°)=15.4 *4* μb/sr (2006Bu09).
2825.0 *4*	2	4.1 *4*	
2842.1 *3*	0		dσ/dΩ(5°)=49.1 *11* μb/sr (2006Bu09).
2872.2 *3*	0		dσ/dΩ(5°)=53.0 *9* μb/sr (2006Bu09).
2878.9 *4*	2	6.8 *7*	
2906.0 *4*	2	8.7 *6*	
2934.1 *5*	2	13.5 *7*	
2947.4 *4*	0		dσ/dΩ(5°)=72.3 *11* μb/sr (2006Bu09).
2961.2 *6*	2	3.4 *3*	
2998.3 *6*			dσ/dΩ(5°)=9.3 *3* μb/sr (2006Bu09).
3009.0 *3*	2	525.5 *5*	
3020.0 *5*	2	2.0 *2*	
3028.6 *6*	0		dσ/dΩ(5°)=10.2 *3* μb/sr (2006Bu09).
3042.4 *5*	2	12.0 *3*	
3049.9 *5*	2	5.7 *3*	
3055.1 *5*	2	1.9 *3*	
3065.0 *7*	0		dσ/dΩ(5°)=1.6 *2* μb/sr (2006Bu09).
3081.3 *6*	2	4.3 *3*	
3098.4 *6*	2	2.9 *2*	
3116.8			
3139.6 *6*	2	8.8 *3*	
3147.2			
3157.5 *7*	0		dσ/dΩ(5°)=2.2 *2* μb/sr (2006Bu09).
3172.5 *7*	2	10.7 *3*	
3183.7 *8*	2	16.4 *4*	
3194.4 *8*	2	2.8 *2*	
3237.2 *8*	2	6.7 *3*	
3269.4 *8*	2	2.0 *2*	
3286.8 *8*	2	5.0 *2*	
3312.8			
3342.9 *10*	2	2.3 *2*	
3361.9 *10*	2	4.9 *2*	
3429.2 *10*	2	6.6 *3*	

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^{170}Er(p,t) 2006Bu09,1985Bu19 (continued)

^{168}Er Levels (continued)

E(level)[†]	L[‡]	dσ/dΩ(14°) μb/sr[#]	Comments
3441.7 *10*	2	4.9 *2*	
3451.6 *10*	2	3.3 *2*	
3459.9 *10*	2	3.6 *2*	
3471.6 *10*	2	4.0 *2*	
3482.6 *10*	2	4.7 *2*	
3493.3 *10*	2	15.8 *3*	
3506.3 *10*	2	8.9 *3*	
3515.7 *12*	2	3.3 *2*	
3529.0			
3561.9 *12*	2	3.9 *2*	
3569.4 *10*	0		dσ/dΩ(5°)=5.5 *3* μb/sr (2006Bu09).
3581.1			
3586.3 *10*	0		dσ/dΩ(5°)=4.7 *2* μb/sr (2006Bu09).
3617.6 *12*	2	1.9 *2*	
3629.9 *12*	2	2.6 *3*	
3663.9 *10*	0		dσ/dΩ(5°)=16.9 *3* μb/sr (2006Bu09).
3682.5			
3696.7			
3714.9 *10*	(0)		dσ/dΩ(5°)=2.4 *2* μb/sr (2006Bu09).
3720.0 *15*	2	3.9 *3*	
3725.2 *15*	2	2.1 *2*	
3734.4 *10*	0		dσ/dΩ(5°)=9.1 *3* μb/sr (2006Bu09).
3740.4 *15*	2	3.7 *3*	
3760.1 *10*	0		dσ/dΩ(5°)=12.3 *3* μb/sr (2006Bu09).
3789.5 *15*	2	2.2 *2*	
3808.5 *15*	2	4.5 *2*	
3819.4 *15*	2	5.7 *2*	
3861.9 *15*	2	2.2 *2*	
3868.7 *15*	2	6.7 *3*	
3876.3 *15*	2	3.6 *2*	
3923[&]			
3928.9 *10*	0		dσ/dΩ(5°)=5.2 *4* μb/sr (2006Bu09).
3933.0 *15*	2	3.2 *3*	
3960[&]			
3964.9 *15*	2	4.6 *3*	
3993[&]			
4033.5 *15*	2	3.0 *2*	
4055.9 *15*	2	2.9 *3*	
4069[&]			
4075.6 *15*	2	2.6 *3*	

[†] From 2006Bu09, except As noted.
[‡] From DWBA analysis of σ(θ) (2006Bu09).
[#] dσ/dΩ At 14° (μb/sr) (2006Bu09). see 1985Bu19 for dσ/dΩ(25°) At E(p)=18 MeV.
[@] From 1985Bu19.
[&] From fig. 1 of 2006Bu09.