Comments

Comments are short papers which comment on papers of other authors previously published in **Physical Review C**. *Each Comment should state clearly to which paper it refers and must be accompanied by a brief abstract.*

Comment on "Electromagnetic dissociation of ^{59}Co and ^{197}Au targets by relativistic ^{139}La projectiles"

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A recent calculation by Hill *et al.* for the electromagnetic dissociation of ^{197}Au and ^{59}Co is corrected.

The recent article by Hill *et al.*[1] describes some very interesting measurements of electromagnetic dissociation (ED) of ^{197}Au and ^{59}Co targets, by ^{139}La projectiles. This complements their earlier work[2,3] using the lighter projectiles ^{12}C, ^{20}Ne, ^{40}Ar, and ^{56}Fe. The experimental data were compared to calculations based on the Weizsacker-Williams (WW) method[3] of virtual quanta. Their data and calculations are listed below in Tables I and II. (The calculations of Ref. 3 have been multiplied by 0.93 as discussed in Ref. 1) As can be seen the agreement between Hill's theory and experiment is reasonable except for a huge discrepancy for ^{139}La projectiles, although there are also smaller discrepancies for ^{12}C and ^{20}Ne on ^{197}Au.

I have repeated the calculations of Hill *et al.*[1-3] using exactly the same photonuclear data (multiplying the ^{197}Au data by 0.93) and exactly the same minimum impact parameter and using the same calculational method. My theoretical results are also listed in Tables I and II. I get similar agreement to experiment for light projectiles as does Hill *et al.*, with similar small discrepancies for ^{12}C and ^{20}Nc on ^{197}Au. However, I also get excellent agreement for the heavy projectile ^{139}La on ^{197}Au and a much better comparison (although still outside the error bar) for ^{139}La on ^{50}Co.

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TABLE I. Electromagnetic dissociation cross sections (σ) for ^{197}Au(RHI,X)^{196}Au reaction.

RHI	Energy (GeV/N)	σ_{expt} (mb) Refs. 1, 2 and 3	σ_{theory} (mb) Refs. 1, 2 and 3	σ_{theory} (mb) Norbury
^{12}C	2.1	75±14	42	40
^{20}Ne	2.1	153±18	113	105
^{40}Ar	1.8	348±34	322	297
^{56}Fe	1.7	601±54	631	578
^{139}La	1.26	1970±130	2340	2089

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TABLE II. Electromagnetic dissociation cross sections (σ) for ^{59}Co(RHI,X)^{58}Co reaction.

RHI	Energy (GeV/N)	σ_{expt} (mb) Refs. 1, 2 and 3	σ_{theory} (mb) Refs. 1, 2 and 3	σ_{theory} (mb) Norbury
^{12}C	2.1	6±9	8.7	7.7
^{20}Ne	2.1	32±11	23	20
^{56}Fe	1.7	88±14	122	105
^{139}La	1.26	280±40	430	358

[1]J. C. Hill, F. K. Wohn, J. A. Winger, M. Khayat, K. Leininger, and A. R. Smith, Phys. Rev. C **38**, 1722 (1988).

[2]J. C. Hill, F. K. Wohn, J. A. Winger, and A. R. Smith, Phys. Rev. Lett. **60**, 999 (1988).

[3]M. T. Mercier, J. C. Hill, F. K. Wohn, C. M. McCullough, M. E. Nieland, J. A. Winger, C. B. Howard, S. Renwick, D. K. Matheis, and A. R. Smith, Phys. Rev. C **33**, 1655 (1986).