

Bayman *et al.* Respond: The main point made in the first part of Ref. 1 was that the relatively large sizes of Li, Be, and B nuclei make it unlikely that their mean free paths, λ , in emulsion could be inferred from systematics based on more compact nuclei, such as ^4He and nuclei with $Z \geq 8$. To illustrate this point, we gave simple arguments, mainly geometrical in nature. DiGiacomo is correct in stating that a more accurate calculation would involve not only nuclear sizes, but also nucleon number densities. We have, in fact, recently performed such calculations (similar to those of Karol² and DeVries and Peng³) employing the best available experimental and theoretical information regarding density distributions of all the nuclei concerned.

Some relevant results are presented in Table I. We list the values of ξ , defined by

$$\xi \equiv \lambda(Z, A) / \lambda(^4\text{He}).$$

For comparison, ξ values calculated from the empirical formula of Ref. 4 are also given. This formula provides a logarithmic interpolation between $Z=2$ and $Z \geq 6$. Significant differences occur only in the cases of Li and Be. For these nuclei, our calculated values of ξ are appreciably lower than the interpolated ones. Measurements are available for ^6Li (Heckman and Judek⁵) and yield a ξ value close to 0.7, in agreement with our calculated value.

We conclude that this calculation, which incorporates the nucleon-nucleon interaction effects emphasized by DiGiacomo, supports the contention of Ref. 1 that the logarithmic interpolation cannot be relied upon to predict λ for light primary projectiles. If we use our calculated λ for primary Li and Be, the discrepancy between primary and secondary values is decreased. It

TABLE I. Calculated and interpolated values of ξ .

Projectile	From Karol ^a - type calculation	From logarithmic interpolation ^b
^4He	1.0	1.0
^6Li	0.72	0.84
^9Be	0.63	0.74
^{11}B	0.64	0.67
^{12}C	0.61	0.62
^{14}N	0.59	0.58
^{16}O	0.54	0.54
^{32}S	0.41	0.40
^{40}Ca	0.38	0.36
^{56}Fe	0.33	0.32

^aRef. 2.^bRef. 4.

seems clear that further experimental data are required to decide whether or not there is in fact a significant difference.

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⁵H. H. Heckman and B. Judek, private communication.

ERRATUM

TRANSVERSE ELECTROMAGNETIC WAVES
WITH FINITE ENERGY, ACTION, AND $\int \vec{E} \cdot \vec{B} d^4x$.
Avinash Khare and Trilochan Pradhan [Phys. Rev.
Lett. **49**, 1227 (1982)].

It was claimed in our paper that the condition

for $\vec{E} \parallel \vec{B}$, i.e., Eq. (9), is satisfied for our choice of \vec{a}, \vec{b} which unfortunately is not the case. However, although $\vec{E}(t)$ is not parallel to $\vec{B}(t)$, $\vec{E}(t=0) \parallel \vec{B}(t=0)$ and $\int d^3x \vec{E}(t) \times \vec{B}(t) = 0$. All other conclusions of our paper remain valid in spite of the error.