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This Week's Citation Classic

Endt P M & van der Leun C. Energy levels of Z = 11 - 21 nuclei (IV). *Nucl. Phys. A* 105:1-488, 1967. [Fysisch Lab., Rijksuniversiteit, Utrecht, The Netherlands]

The paper reviews and evaluates the experimentally determined properties of energy levels of Z = 11-21 nuclei (sodium through scandium), special emphasis being given to nuclear structure data such as energies, lifetimes, branching ratios, spins, parities, and static moments. It is the fourth in a series of papers in which each new paper updates its predecessor.[1-5] [The ***SCI***® indicates that this paper has been cited over 890 times since 1967.]

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"We confess to being slightly disappointed that it was our review article on light nuclei that came up on the 'most-cited' list, and not one of our experimental research papers. Our disappointment was only slight, however, since critical review and evaluation work in our opinion indeed can be regarded as 'full-fledged' research. Nevertheless, the opposite view still persists, namely, that reviewers are nothing but glorified, albeit slow, computers

"The fact that we, for instance, determined more nuclear spins in our review work (by combining evidence from different sources) than in our experiments substantiates our point of view. The objection, which in itself is a correct one, that the number of new spin assignments due to the reviewing is certainly surpassed by the number of de-assignments (because we deliberately excluded erroneous and/or unjustified claims in the literature) in fact only confirms our viewpoint.

"What has caused the high citation frequency of this article? Although we should like to assume some causality between citation rate and scientific quality, a few purely statistical arguments tend to disturb this idyllic picture: (1) Review articles in general enjoy a relatively high citation frequency. (2) This 500-page article covers a broad range of nuclei and thus contains information that is relevant for many nuclear physicists.

"Other statistical considerations, however, limit the rating: (1) *'Citation Classics'* are selected on the basis of a 15-year count. The article we wrote was published in December 1967 and was superseded in 1973 by the next edition. It has therefore been cited mainly over a period of only six years. (2) Several editors of nuclear physics journals are campaigning against unduly long reference lists. Opening sentences like: 'In recent years much attention[1-37] has been paid to...(topic of article follows),' have disappeared. This laudable censorship results in lower impact-factors and lower citation rates for nuclear physics papers. Unfortunately, administrators using these numbers might be less aware of these imponderables than the information experts producing them.

"It has been suggested that a high citation rate is indicative of the usefulness of a paper. In our opinion our article is useful primarily because: (1) It highlights important information by suppressing less relevant or less reliable data. However, a *complete* bibliography is given. (2) It handles the notorious sources of literature pollution (such as unrefereed lab reports, conference proceedings, abstract-journals) as negligently as is compatible with the fast progress in our field of physics. (3) It provides —just as in ordinary research papers — *all* the information necessary to enable the reader to judge the reliability of the conclusions of the evaluators. The latter remark of course does not apply to the more philosophical statements in this one-page comment.

"Finally, it might be mentioned that the present ISI® finding is not the first indication that our review has attracted considerable attention. We have in fact seen copies heavily chained to the control desks of several particle accelerators."

1. Endt P M & Kluyver J C. Energy levels of light nuclei (Z = 11 to Z = 20). *Rev. Mod. Phys.* **26**:95-166, 1954.
2. Endt P M & Braams C M. Energy levels of light nuclei (Z = 11 to Z = 20). II. *Rev. Mod. Phys.* **29**:683-756. 1957.
3. Endt P M & van der Lean C. Energy levels of light nuclei. III. Z = 11 to Z = 20. *Nucl. Phys.* **34**:1-340, 1962.
4 ....., Energy levels of A = 21 - 44 nuclei (V), *Nucl Phys A* **214**:1-625, 1973.
5 ....., Energy levels of A = 21 - 44 nuclei (VI), *Nucl. Phys A* **310**:1-752, 1978.