

Review on [32] - IYPT 2010: Electromagnetic Cannon

authors: Saba Zargham, Hamid Ghaednia; Iran

The strongest and weakest aspect of the paper The strongest aspect of the paper is the comparison of theoretical and numerical analysis with experiments. The weakest aspect is the lack of interpretation of results. The results are presented in graphs, but are only briefly commented.

Organisation and presentation The paper is well structured.

Style The paper is written in good English, with only tiny drwabacks.

Additional questions

- The formula for F_x at the top of p.3 can be simplified by combining two terms and just summing over j from $(y - x)/d_w$ to $(l_s - y + x)/d_w$. If you want to keep two terms, just write e.g.

$$F_x = \Phi((y - x)/d_w) - \Phi((l_s - y + x)/d_w)$$

with

$$\Phi(J) = \sum_{j=0}^J \sum_n \int (...as in the text...)$$

Do not use the name F_x for both quantities in eq. (4) and (5).

- How are the theoretical curves in figs. 7-10 generated? Is this the result of numerical simulations? Are the curves fitted in any way? Please describe them briefly.
- Why are there no measurement errors in your figures?

References Pay more attention to the references. Indicate the title properly, add the publisher's name. A properly formatted reference should look like the following: [1] R. Resnick, D. Halliday, *Fundamentals of Physics*, 6th ed., Wiley.

Rate Fair.

Recommendations

- Please check all the suggestions from this review and apply them.
- Please comment on your results. Putting the data in the graph is not enough for a full report - the interpretation is very important. You do not comment on the graphs obtained, while it remains unclear how were the theoretical curves generated and what input parameters do you measure or fit. I expect to see the interpretation of those results – you need to show the Reader why this particular shape of dependencies you get is right and you need to show your understanding of this fact.

Summary The paper is recommended for publication after revision.