

REVIEWS ON THE MANUSCRIPT [1]

Reviewer 1:

Comments:

The article focuses on the experimental analysis of a single, chosen approach. The article provides the definitions of the terms associated with the problem (e.g. efficiency). The task was analyzed only qualitatively (the conclusions from the measurements are not transformed into quantitative results for the efficiency). The analysis of the aerodynamics of the model is provided and is an advantage of the solution.

The strongest and the weakest aspect of the paper:

The strongest aspect of the paper is the detailed experimental analysis of many designs (aerodynamical properties, nozzle shapes, balloon properties).

The weakest aspect of the paper is that efficiency was not calculated for any case. The theoretical part is only a small part of the solution. Also, the language is sometimes unclear.

Organization and Presentation:

The paper has clear, easy-to-read structure; however, it lacks an abstract section at the beginning, and a section about limitations of the solution.

The “problem” section was turned into an abstract as suggested and I added the section for the limitations.

Style:

The article is sometimes hard to understand. The language is sometimes unclear and unspecific (“car will be adopted”, “using an internal source” of **what?**). You should write shorter sentences, and try to use non-hermetic phrases, like “vehicle autonomy” or “the balloon nozzle is disposed”.

I turned “vehicle autonomy” as one of the definitions of the problem and explained that it should be used as an indirect way of measuring the efficiency, as the problem just asks to maximize it, not necessarily measuring the efficiency itself. I also put it as one of the limitations in the reviewed paper in the proper section for it.

Examples:

- car will be adopted as → car will be treated as; (changed)

- on the shape that the balloon nozzle is disposed → on the shape of the balloon nozzle (changed)
- parallelepiped → ? changed for “rectangular prism” in the revision
- the larger the traveled by car → the larger the distance traveled by car

The last one was a typing mistake, but it is already corrected.

Additional Questions:

- How do you know that in the test with the straw, the flow “tends to be laminar”?

I found this in the reference number 5, but as I’m not finding the page anymore and don’t have any experimental data to show it, I found more plausible to remove it, as the conclusion that I needed for this experiment was already explained by “*The paper straw directed the flow, so the car could travel a larger distance for the same amount of combustible*”.

- What is the highest efficiency in your design of the car?

Unfortunately, I wasn’t able to measure the efficiency itself, but that is now explained in the limitations section.

- Straw in the propeller – what does it mean?

I changed for “straw as the nozzle” as I do believe it is actually better.

References:

The number of used references is good. It is sometimes unclear if the reference is a book or journal (please add more information – year of publishing, journal name, volume, page numbers, publisher of the book etc.).

It is changed now and explained in details in the same objection of the second reviewer.

The references are properly and professionally mentioned throughout the text.

Recommendation: all the recommendations were applied in the revision.

- Change “the problem” section to “abstract”. Add to the abstract a few sentences describing your solution and summarizing briefly your results.
- Revise the language, possibly with a technical dictionary/translator.
- Attach a chapter with a discussion of limitations of your solution (descriptions of limitations is scattered through the article).
- Add a few sentences about the final efficiency of your design, the longest and the shortest distance etc.

Summary:

The manuscript is recommended for publication only after essential revisions.

Reviewer 2:

This paper has good structure.

I recommend this paper.

Editorial request:

Concept: It appears clear that the author considers only the cars where the deflating balloon provides propulsion (a *rocket-type* car.) Please justify *why* this concept is considered and why any other possible approaches are not. This explanation would equally work as a necessary introduction for the readers into your approach.

I added a few sentences that should work as an explanation for this definition based on the objectives of the problem.

References: Please check the references [4] and [5]. The reference [5] appears to be a journal article but this article cannot be found as almost no specific details are given (year, volume, pages, title of the paper.) The reference [4] is suspected to be a book. Consider making the reference more specific, at least with the details of the publisher.

The reference 4 didn't have much information about the publication. As the reference number 5 had the same information used from number 4 in the page 250, I turned number 5 into number 4 and added this extra page to the references. The reference was a book and now it has the details of the publisher and the edition where the information come from.

Consistency of spelling: Please use a blank spacing between a numerical value and its dimension (0.05 cm, not 0.05cm). (changed)

Observation: Some minor typing mistakes were also corrected.