Review of: "Mass Creation via the Phase Transition of the Higgs Field"

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Potential competing interests: No potential competing interests to declare.

The approach to the problem is interesting and original, since it questions the phase transitions in the bistable potential well of the Higgs field, giving arguments supported by catastrophe theory and contradicting those assumed in particle physics. The objectives are clear and fully developed and are reflected in the results obtained, which show how the corrected Higgs field potential can be derived. The theoretical framework of the research is concise and the calculations are transparent, making use of catastrophe theory, which has been a great tool in the field of phase transitions. Therefore, I believe that the article entitled "Mass Creation via the Phase Transition of the Higgs Field" is research that could be relevant and pertinent in the field of particle physics.

From my point of view, I give some suggestions that would help to better understand what is written in the article. 1) The mathematics used in the first method (section 2.1) is very easy to follow and includes the interpretation from particle physics theory. In contrast, the second method is more straightforward but obscure. Therefore, I suggest that this part should not be included in the article or, failing that, it should be an appendix. 2) The caption of figure 2 mentions a proportionality between k and T-T_c. I suggest giving the direct relationship to increase the transparency of the mathematical development. 3) The second paragraph of section 3.2 talks about a catalysis process in chemical reactions. I suggest giving a brief explanation of the catalysis process in the Higgs field problem. 4) There is no conclusion section, which is fundamental for the publication of a scientific article.