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| Book Name: | [**Physical Science: New Insights and Developments**](https://bookstore.bookpi.org/product/physical-science-new-insights-and-developments-vol-1/) |
| Manuscript Number: | **Ms\_BPR\_6014** |
| Title of the Manuscript: | **Symmetry Breaking Model of Volume Pulsating Walking Droplets** |
| Type of the Article | **Book Chapter** |

**Special note:**

**A research paper already published in a journal can be published as a Book Chapter in an expanded form with proper copyright approval.**

**Source Article:**

**This chapter is an extended version of the article published by the same author(s) in the following journal.**

**PROGRESS IN PHYSICS, 16(2): 102-105, 2020.**

**Available:** [**https://www.progress-in-physics.com/2020/PP-60-05.PDF**](https://www.progress-in-physics.com/2020/PP-60-05.PDF)

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| PART 1: Comments | | |
|  | Reviewer’s comment **Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | Author’s Feedback *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.** | This paper touches on a genuinely interesting and intricate topic—the behavior of walking droplets and how symmetry breaks within them. The authors take a fresh angle by developing a generalized model that includes volume pulsations and acoustic gravity waves, which adds new depth to understanding how horizontal motion can emerge in these systems. It ties in well with current discussions around hydrodynamic analogues and wave–wave-particle-like behavior. The work stands out as a valuable theoretical contribution and will likely be of interest to those working in fluid dynamics, mathematical modeling, and nonlinear systems. |  |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | Yes, the title fits the paper well. It reflects the main idea and gives a good sense of both the theoretical model and the physical concept that the authors are focusing on. |  |
| Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here. | The abstract outlines the main idea and approach well, but could be slightly improved. A brief mention of the key results or insights gained from the model would make it more informative. Also, the final sentence could summarize the contribution more directly. Otherwise, the abstract gives a good initial impression of the paper. |  |
| **Is the manuscript scientifically, correct? Please write here.** | The work appears mathematically sound and logically structured. The assumptions and derivations are clearly explained, and the physical reasoning is consistent. Some of the connections to experimental observations could be elaborated a bit more, particularly regarding the role of acoustic gravity waves. However, the approach is innovative, and the conclusions are drawn cautiously, which is appreciated. |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.**  **-** | The references are quite well chosen. They include both foundational and recent works related to walking droplets and pilot-wave dynamics. I would suggest adding one or two newer references (if available) that deal with either volume-pulsating systems or related experimental findings, just to round it out further.They include both foundational and recent works related to walking droplets and pilot-wave dynamics. I would suggest adding one or two newer references (if available) that deal with either volume-pulsating systems or related experimental findings, just to round it out further. |  |
| Is the language/English quality of the article suitable for scholarly communications? | The English is generally very good and suitable for academic writing. A few areas — especially in the abstract and the model description — could be made slightly clearer by breaking long sentences into shorter ones. That said, there are no major issues, and only minor editing would be needed. |  |
| Optional/General comments | The authors have explored an interesting and fresh perspective on a long-standing question in walking droplet physics. The link they draw between symmetry breaking and acoustic gravity waves adds a unique dimension to the discussion. Including a brief conclusion to highlight the key takeaways and suggest future directions would help bring the paper to a satisfying close. A simple figure or schematic could also be a great addition to make the model easier to visualize and understand.  **Recommendation: Minor Revision**  This is a well-written and original paper that presents a thoughtful theoretical model. Just a few small improvements — mostly related to clarity and summary — would make it even stronger |  |

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| **PART 2:** | | |
|  | **Reviewer’s comment** | **Author’s comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Are there ethical issues in this manuscript?** | *(If yes, Kindly please write down the ethical issues here in details)* |  |

**Reviewer details:**

**Priyanka Bisht, India**