Review of: "Non-dimensionalization of the Compressible Navier-Stokes Equation by Pressure Wavelength and Period revealing its Singularity"

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Potential competing interests: No potential competing interests to declare.

After carefully reviewing the manuscript titled "Non-Dimensionalization of the Compressible Navier-Stokes Equation by Pressure Wavelength and Period revealing its Singularity" by Shisheng Wang, I have identified areas where revisions are necessary for the manuscript to meet the journal's standards for publication. The manuscript presents an innovative approach to understanding fluid dynamics in the compressible flow regime but requires improvements in several areas. I recommend minor revisions as outlined below:

Abstract:

The abstract needs to be concise, highlighting the novel method's significance, main findings, and potential impact succinctly. It should clearly differentiate the study from existing literature.

Keywords:

Include 5-7 keywords that accurately reflect the manuscript's content and can aid in its discoverability.

Classifications:

Provide appropriate classifications according to the journal's guidelines, ensuring they accurately represent the manuscript's main themes.

Introduction:

The introduction requires expansion to include a more comprehensive literature review, situating the study within the current state of knowledge and clearly stating its contribution to the field.

Equations:

Ensure all equations, including equations (1) and (2), are referenced properly in the text, providing a clear connection between the theoretical analysis and these foundational equations.

Main Results:

Clearly summarize the main results derived from your analysis, emphasizing their implications for the field of fluid dynamics and the study of singularities in compressible flow.

Research Gap:

In the concluding section, explicitly mention the research gap your study addresses, linking this back to the objectives stated in the introduction.

SI Units:

For Table 1 and throughout the manuscript, ensure all parameters are presented with SI units to maintain consistency and facilitate understanding.

Conclusions:

Reword the conclusions in bullet points, each highlighting a key finding or implication of your research, making them more accessible to readers.

Technical Corrections and Clarifications:

Address the specific issues raised by reviewers, such as the need for clarity in variable presentations, corrections of typographical errors, and ensuring consistency in the use of notation and terminology throughout the manuscript.

Specifically, address the concerns regarding the choice of a 1D system, explaining its relevance and implications for broader applications, including potential extensions to 2D systems.

References:

Ensure all references are written in a uniform pattern and include all necessary citations for important data and equations assumed within the text. The references should be up-to-date, incorporating recent research that supports your manuscript's claims and methodology.

Given the innovative nature of your work and its potential contribution to the field, addressing these points will significantly strengthen the manuscript. Please revise your manuscript accordingly and resubmit it for further consideration. Upon resubmission, your revised manuscript will undergo another round of review to ensure that all concerns have been adequately addressed.