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.

Reviewer's comment to Editor and Authors on the submitted manuscript entitled

"Non-Dimensionalization of Compressible Navier-Stokes Equation by Pressure Wavelength and Periodic Revealing its Singularity"

by S. Wang for possible publication in Qeios Journal.

Authors have given their best efforts to represent the compressible Navier-Stokes equations into a non-dimensional frame using wavelength and have observed that it reveals the singularity. The execution is performed using numerical simulation. I enjoyed reading the article throughout, and it is well within the scope of the journal.

However, before it gets published in the journal, I will recommend some **major revisions** to the manuscript based on the following questions.

1. If we transform any equation (differentiable) to a new coordinate system and the system itself is non-differentiable, then by default, the transformed equation will be non-differentiable. So, my question is, if the author is transforming a differential equation to a new system, then on what basis the transformation system is chosen? Is there any mathematical proof related to the existence of the same?

2. What kind of singularity is observed? Is it removable? Can any constraint on the domain help the fluid flow without singularity?

3. Further, the one-dimensional flow has many additional assumptions. So, is it a good way to comment on the general NS equation for singularity based on just a one-dimensional flow analysis?