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.

I have read the paper, and I will try to be as specific as possible, but it is hard because I do not know what the paper is supposed to be focused on. The paper looks like a compilation of more independent sections without a clear connection. The problem is interesting, but its importance is not highlighted enough in the paper.

The abstract should attract readers to read the whole paper, but it seems to be just the first part of the introduction section that has been removed from section 1.

The introduction could have been written with a deeper literature survey.

Section 2 is scattered; I am missing a path leading through the problem. Basically, equation (2) could continue with equation (19) without losing anything important.

Exp in italics looks like multiplication of variables*e*, *x*, and *p*, e.g., equation (1); the same for*constant*.

Equation (3) or equation (5) should be used, not both of them. Equation (6) is just the matrix form saying that the observed wavelength is a function of the source wavelength, and it is said twice when looking at equation (3). The same for equation (7).

There are also collisions of variables: e.g.,*u* in eq. (15) is not the same as in equation (22) and equation (A1). Something similar can be found when focusing on the variable *v*.

I would recommend using only index notation or vector notation, but do not mix it in one equation, at least. E.g., equation (24).

It is not clear why the Bernoulli equation is derived. There is also a missing connection of section 3.2 with the rest of the paper. It is not explained why it is important.

I do not know whether density can be written as the division of mass and volume. When dealing with a continuum, it looks like an average density. Equation (36).

The discussion section says that the Navier-Stokes equation cannot be used for velocities above the speed of sound, but this statement is not satisfying. There should be a deeper insight into the obtained results and their physical meaning,

e.g., how they are developing with changing velocity.

I would welcome a list of symbols with an explanation.