Review of: "Tsallis Entropy applied to microfluidic channels analysis"

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Potential competing interests: No potential competing interests to declare.

This exploratory work showcases the application of Tsallis entropy to investigate fluid flow in microchannels containing geometric obstacles. By harnessing information theory, we unravel the ability of fluid systems to retain and transport information generated during interactions. This study exemplifies how unconventional approaches, such as employing Tsallis entropy, can illuminate complex physical observations and contribute to a deeper understanding of fluid dynamics, even in scenarios where traditional methods may falter. The insights gleaned from this study offer promising avenues for further research and practical applications across various disciplines.

The problem is interesting, high-level research and the results are important, but the paper needs the following points are noted:

1. The author should explain the novelty clearly in the abstract and conclusion.
2. What are the advantages of the proposed new model?
3. The authors should include scientific reasoning for graphical results in details.
4. What are the advantages of the method used?
5. English should be improved on the paper.
6. The literature survey might be improved on adding some relevant references as:

- Finite element analysis of the thermoelastic interactions in an unbounded body with a cavity. Forsch Ingenieurwes 2007, 71, 215-222, doi:10.1007/s10010-007-0060-x.

- An Eigenvalues Approach for a Two-Dimensional Porous Medium Based Upon Weak, Normal and Strong Thermal Conductivities. Symmetry 2020, 12, doi:10.3390/sym12050848.

- 2D deformation in initially stressed thermoelastic half-space with voids. Steel Compos. Struct. 2016, 20, 1103-1117, doi:10.12989/scs.2016.20.5.1103.

-Nonlinear transient thermal stress analysis of temperature-dependent hollow cylinders using a finite element model. Int. J. Struct. Stab. Dyn. 2014, 14, doi:10.1142/S0219455414500254.

- Photo-thermal interactions in a semi-conductor material with cylindrical cavities and variable thermal conductivity. Journal of Taibah University for Science 2020, 14, 1369-1376, doi:10.1080/16583655.2020.1824465.

- The Effects of Fractional Time Derivatives in Porothermoelastic Materials Using Finite Element Method. Mathematics 2021, 9, doi:10.3390/math9141606.