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Mixing of relativistic ideal gases with relative relativistic velocities

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Statement of the Problem: The Redefined Relativistic Thermodynamics is tested by means of mixing two ideal gases at different temperatures and distinct velocities.

Methodology & Theoretical Orientation: The conservation of the 4-vector energy–momentum is used to obtain the final temperature and the final velocity of the ideal gas mixture. Findings: The conservation of the 4-vector energy–momentum leads to a tremendous increment of the temperature.

Conclusion & Significance: This phenomenon can be used in order to describe the heating of a cold clump with shocked jets material. A prediction for improving the ignition of a Tokamak is proposed. The compatibility of the Redefined Relativistic Thermodynamics with the thermodynamical field theory is analyzed.

Biography

R E Gonzalez-Narvaez works on Redefined Relativistic Thermodynamics (RRT) (Ares de Parga *et. al.*). She has studied the relativistic effects on thermodynamic systems. She has worked on the importance of setting normal time-like 4- vector in two reference frames, namely, the rest frame and the lab frame because this choice is crucial in transformation law. Moreover, with Ares de Parga *et. al.*, he demonstrated that 4-momentum of a system is a well-defined vector if there is no interaction within it.

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