

ACOUSTIC APPROXIMATION TO THE LAWS OF GASES, USED IN THERMOACOUSTICS

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ABSTRACT

This work presents a new form of the laws of fluids, using some approximation. The laws of fluids [3], [4], [10], are revisited, with simplified forms presented here that are suitable for use in the thermacoustics. These simplified forms are called “Rott’s acoustic approximation” [3], [10].

REFERENCES

- [1]. George ANDREI, Dan ANDREI, A new concept: thermoacoustics; thermoacoustic engines, The 30th Annual ARA Congress, July 5 – 10, 2005, Chisinau, Republic of Moldova, pag. 475-478, ISBN 9975-75-313-2.
- [2]. Dan ANDREI, George ANDREI, *Thermoacoustic engines*, - Prima Sesiune de comunicări științifice cu participare internațională METIME, Publicate în Analele Universității din Galați, anul XIX, Galați 3-4 iunie 2005, pag.181-184, ISSN 1221-4558.
- [3]. George ANDREI, *Sisteme termoacustice utilizate în schimbul de căldură*, Referatul nr.1, Universitatea „Dunărea de Jos” din Galați.
- [4]. Adrian BEJAN, *Convection Heat Transfer*, John Wiley&Sons, 1984.
- [5]. N Rott, *Thermoacoustics*. Advanced in Applied. Mechanics, 20 :135-175, 1980.
- [6]. N. Rott, *Damped and thermally driven acoustic oscillations in wide and narrow tubes*, Z. Angew. Math. Phys., 20:230-243, 1969.
- [7]. N. Rott, *Thermally driven acoustic oscillations*, part II : Stability limit for helium. Z. Angew. Math. Phys., 24:54 , 1973.
- [8]. N. Rott, *Thermally driven acoustic oscillations*, part III : Second order heat-flux. Z. Angew. Math. Phys., 26:43 , 1975.
- [9]. Gregory W. SWIFT, *Thermoacoustic engines and refrigerators*, Physics Today, 22-25, july 1995.
- [10]. Gregory W. SWIFT *Thermoacoustics: A unifying perspective for some engines and refrigerators*, Condensed Matter and Thermal Physics Group, Los Alamos National Laboratory, fifth draft, 29 may 2001.