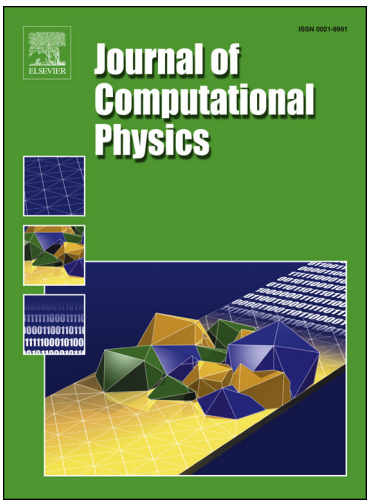
Accepted Manuscript



A Conservative Numerical Scheme for Modeling Nonlinear Acoustic Propagations in Thermoviscous Homogeneous Media

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PII: S0021-9991(18)30081-0
DOI: https://doi.org/10.1016/j.jcp.2018.02.005
Reference: YJCPH 7843

To appear in: *Journal of Computational Physics*

Received date: 2 May 2017
Revised date: 17 November 2017
Accepted date: 2 February 2018

Please cite this article in press as: M.A. Diaz et al., A Conservative Numerical Scheme for Modeling Nonlinear Acoustic Propagations in Thermoviscous Homogeneous Media, *J. Comput. Phys.* (2018), https://doi.org/10.1016/j.jcp.2018.02.005

Highlights

- A conservative nonlinear thermoviscous acoustic system model is proposed.
- Strongly nonlinear acoustic waves are studied with high-order WENO schemes. A focused ultrasound device has been studied to physically validate the model.
- Simulations using GPU accelerators were performed to illustrate the method in 2-d.