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**Nonlinear Phenomena in Acoustics: Traveling Waves, Bifurcations, and Singular Surfaces<sup>1</sup>**

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Traveling wave solutions (TWS) are explored in the context of nonlinear acoustics. Exact solutions are given, including one involving the recently introduced Lambert  $W$ -function, along with asymptotic and stability results. Poroacoustic propagation under Darcy's and Forchheimer's laws is examined, as well as acoustic phenomena in thermoviscous fluids. Additionally, a connection between discontinuity formation in the TWS and the associated singular surface, which is known as an acceleration wave, is pointed out. Lastly, if time permits, applications to nonlinear kinematic wave phenomena (e.g., second-sound and traffic flow) are briefly noted.

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