Comparative study of attenuation and dispersion of different pressure disturbances propagating in aerosols

Riady Siswoyo Jo, Basil T. Wong, Anatoli Vakhguelt

- School of Engineering

Abstract

This study aims to investigate the attenuation and dispersion of pressure waves propagating in aerosols. A numerical scheme based on Crank-Nicolson finite differencing and trapezoidal quadrature discretization methods is employed to simulate the evolutions of several pressure waves with different initial profiles (disturbances). The attenuation and dispersion are observed from the spectra of the wave profiles at different times of propagation obtained by performing FFT (Fast Fourier Transform) to the simulated wave profiles. Simulation results show distinctive behaviors of different pressure disturbances propagating through the same medium.

Original language	English
Title of host publication	International Conference of Numerical Analysis and Applied Mathematics 2015, ICNAAM 2015
Publisher	American Institute of Physics Inc.
Volume	1738
ISBN (Electronic)	9780735413924
State	Published - Jun 8 2016
Event	International Conference of Numerical Analysis and Applied Mathematics 2015, ICNAAM 2015 - Rhodes, Greece
Other	International Conference of Numerical Analysis and Applied Mathematics 2015, ICNAAM 2015
Country	Greece
City	Rhodes
Period	9/23/15 → 9/29/15

Jo, R. S., Wong, B. T., & Vakhguelt, A. (2016). Comparative study of attenuation and dispersion of different pressure disturbances propagating in aerosols. In *International Conference of Numerical Analysis and Applied Mathematics 2015, ICNAAM 2015.* (Vol. 1738). [030003] American Institute of Physics Inc..
DOI: 10.1063/1.4951759