



復旦大學
FUDAN UNIVERSITY

Applied Math
Ph.D. Seminar

The Cauchy Problem for Nonlinear Acoustics

Speaker: Wenhui Chen (Shanghai Jiao Tong University)

Time: 2021-04-08, 16:10 to 17:00

Location: Rm 1801, Guanghua East Tower

Abstract: In this talk, the Cauchy problem for the Moore-Gibson-Thompson (MGT) equations will be introduced, which can describe the propagation of sound (nonlinear acoustics) in thermoviscous fluids. Concerning the linearized MGT equations, some qualitative properties of solutions will be shown, including sharp decay estimates, asymptotic profiles, large-time approximations, and singular limits with respect to the thermal relaxation tending to zero. Then, global (in time) existence of small data solution or blow-up of solutions for the semilinear MGT equations and Jordan-MGT equations will be presented. Particularly, the blow-up phenomena for the semilinear MGT equations in the conservative case and the dissipative case are quite different. This talk is based on joint works with Ryo Ikehata and Alessandro Palmieri.