1161-35-19　　　　　**Irena Lasiecka*** (`lasiecka@memphis.edu`), Department of Mathematical Sciences, University of Memphis, Memphis, TN 38120, and **Marcelo Bongarti**. *Vanishing time relaxation in Jordan-Moore-Gibson-Thompson [JMGT] dynamics.*

The (third-order in time) MGT equation is a nonlinear (quasi-linear) Partial Differential Equation (PDE) describing a nonlinear propagation of sound in an acoustic medium.The interest in studying this type of problems is motivated by a large array of applications arising in engineering and medical sciences-including high intensity focused utrasound [HIFU] technologies. The important feature is that the model avoids the infinite speed of propagation paradox associated with a classical second order in time equation referred to as Westervelt equation. Replacing Fourier's law by Maxwell-Cattaneo's law gives rise to the third order in time derivative scaled by a small parameter $\tau > 0$, the latter represents the thermal relaxation time parameter and is intrinsic to the medium where the dynamics occurs. This talk will discuss an asymptotic analysis of the third order model when $\tau \to 0$. It is shown that the corresponding solutions converge *in a strong topology of the phase space* to a limit which is the solution of Westervelt equation. This addresses the open question raised recently in the context of JMGT dynamics.

Joint work with Marcelo Bongarti and Sutthirut Charoenphon. (Received July 21, 2020)