

1146-35-455

Irena Lasiecka, Michael Pokojovy and Xiang Wan* (xiangwan@wayne.edu). *Quasilinear Thermo-elastic Plate PDE Systems: From Parabolic-Hyperbolic To Hyperbolic-Hyperbolic.*

This talk will discuss Quasilinear thermo-elastic plate PDE systems defined on bounded domains in 2- or 3-d spaces. I will start with a parabolic-hyperbolic system where the heat conduction is described by the classic Fourier Law, and both well-posedness and long time behavior will be addressed. A second case follows where the heat conduction is described by the Cattaneo-Maxwell Law. This results in (i) lack of dissipative effect; and (ii) lack of the regularity otherwise typically associated with the heat equation. These two properties – dissipation and regularity, the “key players” in any quasilinear theory - are severely compromised by the new model under consideration. (Received January 28, 2019)