QUASILINEAR THERMO-ELASTIC PLATE PDE SYSTEMS: FROM PARABOLIC-HYPERBOLIC TO HYPERBOLIC-HYPERBOLIC

Abstract. 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 player" in any quasilinear theory – are severely compromised by the new model under consideration.

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