1126-35-315   **Irena lasiecka**, Memphis, TN, **Michael Pokojovy**, Karlsruhe, Germany, and **Xiang Wan***
(`xw5he@virginia.edu`), Charlottesville, VA. *On the Global Well-posedness and Stability of Nonlinear Thermo-elastic Plate Equations with Fourier or Maxwell-Cattaneo Laws.* Preliminary report.

We consider a nonlinear thermo-elastic system defined on a bounded domain $\Omega \subset \mathbb{R}^n, n = 2$ or 3 with the boundary conditions imposed on $\Gamma = \partial\Omega$ corresponding to the simply supported plate. The main goal of this talk is to discuss the well-posedness and long term behavior of suitable solutions of the system.

We will discuss the challenge for the case of Kirchhoff-Love plate, of which the system is either of hyperbolic-parabolic type corresponding to the Fourier Law, or of completely hyperbolic type corresponding to the Maxwell-Cattaneo Law. From a mathematical point of view, the most important message is that the analyticity and maximal regularity of the associated linear system are gone. We will show how to choose suitable topologies to overcome this difficulty.

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