Maximal regularity and generation of semigroups for linear plate equations

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We consider the linear thermoelastic plate equation with free boundary conditions. It can be shown that this equation in sufficiently smooth domains is uniquely solvable in time-space Sobolev spaces (i.e., it has maximal regularity) and that the associated first-order system generates and analytic semigroup. The proof is based on careful symbol estimates for the solution operators. We also discuss the situation for structurally damped plate equations and partial damping.

The talk is based on joint results with Yoshihiro Shibata (Tokyo), Roland Schnaubelt (Karlsruhe), and Felix Kammerlander (Konstanz).