

ON THE DECAY OF THE LINEAR THERMOELASTIC PLATE WITH MEMORY

MAURIZIO GRASSELLI*, JAIME E. MUÑOZ RIVERA[†], VITTORINO PATA*

ABSTRACT. We analyze the longterm properties of a C_0 -semigroup describing the solutions to a linear evolution system that models a thermoelastic thin plate with memory effects in the heat flux law. Under reasonably general assumptions on the memory kernel, all single trajectories are shown to decay to zero. In spite of that, the semigroup is not exponentially stable.

2000 *Mathematics Subject Classification.* 35B40, 45K05, 47D03, 74K20.

Key words and phrases. Thermoelastic Kirchhoff plate, heat conduction with memory, C_0 -semigroup, decay of solutions, exponential stability.