1086-93-603 **M. Najafi**, Department of Mathematics, Kent State Univers, Ashtabula, OH , and **Mohammad Moe Najafi*** (mnajafi1@kent.edu), Department of Physics, Kent, OH 44242. *Stabilizability of Coupling Controllers of Waves due to Energy functional and Decomposition methods.*

In this paper, the stabilizability conditions of a system of wave equations, coupled in parallel with distributed springs and viscous dampers, are investigated via energy perturbation and decomposition methods for different wave propagation speeds. To this end, the mathematical analysis of Eigen spectrums of vibration, energy multipliers, energy perturbation, etc. was employed. The analytical solution of this system in Rn, n$\leq$3, whose energy will be damped out by the distributed internal velocity feedback controllers, was also under consideration to support the theoretical aspect of this research (Received September 08, 2012)