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Guillermo Reyes* (guillermo.reyes@usc.edu), guillermo.reyes@usc.edu. *Equipartition of energy in operator-damped abstract wave equations.*

In this talk I will present some recent results, obtained in collaboration with J. A. Goldstein on the asymptotic equipartition of energy for damped abstract wave equations of the form

$$u_{tt} + 2F(S)u_t + S^2u = 0,$$

where S is a strictly positive selfadjoint operator and the damping operator $F(S)$ is “small” in a sense to be precised. Namely, we prove that the ratio of suitably modified kinetic and potential energies, $\tilde{K}(t)/\tilde{P}(t)$, tends to 1 as $t \rightarrow \infty$ for all nonzero solutions $u(t)$ of the equation. Some examples involving PDEs, as well as pseudo-differential equations, are given.

I plan to devote some time to introduce the subject of equipartition, as well as to present some previous results concerning the undamped case and the scalar-damped one as motivations. (Received August 20, 2015)