Wafa Ahmadi (Sousse)

Title. Stability results of locally coupled wave and Euler Bernoulli equations with local Kelvin-Voigt dampings

Abstract. In this talk, first, we investigate the stabilization of locally coupled wave-Euler Bernoulli beam equations with local Kelvin-Voigt dampings. We considered three cases: The case when the supports of the dampings and the coupling coefficients are disjoint and in the second and the third cases, we assume that there is an intersection between the damping and coupling regions. We proved a polynomial energy decay rate of type t^{-1} and $t^{-1/2}$. Next, we generalize this work to a multidimensional case and we study the strong stability of the system under several geometric conditions. Also, we showed that the corresponding semigroup is analytic when the Kelvin-Voigt dampings are globally distributed. Then, using one or two damping(s), we established an energy decay rate depending on the exponential or polynomial decay rate of two auxiliary problems.