Identifiant de la contribution : **242** Type : **non spécifié**

”PACO#4 - Understanding vibroimpact damping through a numerical energy based approach”

mercredi 12 juillet 2023 15:00 (20)

Vibroimpact damping classically consists in the integration in a main vibrating structure of oscillating masses. The energy is dissipated thanks to the impact interactions with the main vibrating structure. An assumption is that an energy transfer towards high frequencies occurs thanks to nonlinear effects, leading to a faster and more efficient energy dissipation compared to lower frequencies. This hypothesis is investigated within the framework of the work presented, in the case of a beam equipped with a vibroimpact absorber, assuming conservative impacts. A numerical study is developed to solve the equations of motion and derive energy balance with negligible error. Then, the energy transfers in the case of a harmonic excitation centered on not only the first, but also the second, and third mode are considered demonstrating the effectiveness of the vibro-impact absorber in each case. Additionally, the way the energy is dissipated is explained and quantitatively assessed. At least, the results obtained for the three first modes are compared.

Presenter(s) : SADOULET-REBOUL EMELINE

Classification par session : Survishino 11 / Passive control of Vibrations