

Conférence

Conference

## Nonlinear passive control and energy localization in mechanical and structural systems

### Conférencier | Speaker

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### Date

**03 novembre 2022**

### Heure | Hour

**12:30 à 13:30**

### Local

**C-539.6 - Polytechnique Montréal**

### Lien

**[polymtl-ca.zoom.us/j/81234505617](https://polymtl-ca.zoom.us/j/81234505617)**

### Résumé | Abstract

Nonlinearities can be exploited for designing desired responses of vibratory systems and materials against external excitations. It has been shown that via coupling nonlinear oscillators (pure cubic at their original forms) namely, nonlinear energy sink (NES), it is possible to create a targeted energy transfer (TET) phenomenon between oscillators. For this seminar, a methodology will be explained for detection of fast and slow system dynamics leading to prediction of periodic and non periodic regimes. Some applications of such systems with the NES possessing smooth and non-smooth nonlinearities will be presented. Finally, some works will be illustrated which treat the localization in systems via inclusion of nonlinear oscillators in the form of chain. The latter, opens the research domains in the field of nonlinear vibro-acoustical metamaterials.