



ID contributo: 35

Tipo: **Presentazione orale**

Parametric characterization of generic response loads for vibration fatigue assessment

mercoledì 3 settembre 2025 15:00 (15 minuti)

Defining generic response loads for vibration fatigue analysis presents a significant challenge, particularly when the structure or excitation is not known a priori. This issue is critical in the development of advanced methodologies for damage assessment, where a well-defined representation of loads enables both improved training and robust testing strategies. Structural damage is intrinsically linked to the dynamic response of the system, which alters the excitation's frequency content due to resonance effects. Consequently, stress frequency distributions often exhibit bimodal or wideband power spectral density characteristics. This research proposes a parametric approach to defining such generic responses and establishes a connection between these parameters and spectral indices commonly used in statistical damage assessment methods. Furthermore, the study systematically explores and defines the parameter space governing both power spectral densities and spectral indices across multiple structural configurations.

Autore principale: CURTI, Giulio (Università di Perugia)**Coautore:** Prof. PALMIERI, Massimiliano (Università di Perugia); Prof. CIANETTI, Filippo (Università di Perugia)**Relatore:** CURTI, Giulio (Università di Perugia)**Classifica Sessioni:** Fatica e Frattura**Classificazione della track:** Fatica e Frattura