Vibration Monitoring in Buildings
and
Its Application in Seismic Risk Reduction

Eric M. Hernandez, PhD
Associate Professor, University of Vermont

EERI, New England Chapter, Lecture Series
Friday September 30, 2022, 1:00 – 2:00PM (Eastern Time)

The Zoom Seminar is FREE!

For registration, please visit:
https://us06web.zoom.us/meeting/register/tZEtde-sqDIiHtWZ1ibd8IfgQpouUzg7B4oY

Abstract: Seismic risk as it relates to buildings is a product of the seismic hazard, the structural vulnerability and the consequences of failure. Monitoring vibrations in buildings before, during and after potentially damaging earthquakes can provide valuable information regarding the structural characteristics of buildings and their vulnerability. In contrast to building codes and regulations, which address the building population as a statistical ensemble, vibration monitoring allows engineers and stakeholders to obtain individualized information about their particular building structure. Information extracted from vibration measurements can be used to improve rapid screening, make better predictions regarding future performance during a potentially damaging earthquake, inform decisions regarding retrofit, and perform rapid post-earthquake assessments which can significantly improve community resilience. In this talk, Prof. Hernandez will present the theoretical foundations of seismic vibration monitoring, on-going research on the topic, and some real-world applications.

Biography: Prof. Eric M. Hernandez is a professor of Civil and Environmental Engineering and the Graduate Program Director at the University of Vermont. He specializes in structural engineering and has over 20 years of experience as a researcher, consultant, and educator. He received his BS in Civil Engineering from Universidad Nacional Pedro Henriquez Urena in the Dominican Republic and his MS and PhD in Civil Engineering from Northeastern University. His research interests include structural dynamics, inverse problems, earthquake engineering, reliability of engineering systems and structural health monitoring. Since joining the University of Vermont in 2011 he has received several research grants from the National Science Foundation, NASA and the Vermont Agency of Transportation. In 2018, he received the inaugural Sweeny Green and Gold Professorship in Civil Engineering. At the University of Vermont Prof. Hernandez teaches courses in structural analysis, earthquake engineering and reliability of engineering systems.