

## **Structural Identification And Monitoring Of A 52-Story High-Building In Downtown Los Angeles Based On Short-Term Ambient Vibration Measurements**

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This work presents an evaluation of a promising sub-structuring SHM approach suitable for structures based on real data from a 52-story building in Los Angeles. This building is instrumented with a relatively dense set of sensor arrays and is being continuously monitored through the Community Seismic Network (CSN). The main contribution of this study is to demonstrate the practical feasibility of the proposed sub-structuring approach when relying on extremely low levels of ambient measurements. The study assesses the accuracy and reliability of the estimates of the dominant modal features of the structure and can subsequently provide a probabilistic measure of confidence in the location of changes if an anomaly is detected. Due to the minimal computational resources needed to implement the sub-structuring approach, it is shown to be efficient for near-real-time applications where important structures need to be continuously monitored for sustainability and resiliency requirements.