Structural Health Monitoring Technologies for Civil Engineering Structures

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چکیده :

This paper discusses basic principles of Structural Health Monitoring (SHM), how it has evolved and current state-of-the-art. The need for monitoring is categorized under main titles of necessity for SHM. The toolbox of monitoring projects share similar sensors. Most commonly used sensors and their working principles are briefly discussed. The duration of measurement and outcomes obtained from short and long term monitoring are elaborated. Dynamic and static measurements sometimes need to be combined for the maximum gain from monitoring studies. Advanced tools like modal analysis, acoustic emission, ultrasonic pulse velocity, eddy current, NDT techniques are covered in principle. The variety of structure types that are suitable for monitoring are listed and discussed. The conclusions summarizes the past, present, and future of SHM and its applications

کلید واژه : structural health monitoring, structures, sensors