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Experimental Study on Measurement of Strain Distribution on Simply Supported Steel Beam Using FBG Strain Sensors

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Monitoring of individual member is necessary and important in light of structural safety especially in building structure. To obtain information on health status of a member, the critical process is to find the maximum stress or strain which can be compared with allowable stress or stiffness through design codes. This means a proper data processing must be included when monitoring members. Thus, experimental study for measurement of strain distribution from scattered and limited data is presented in this research to determine accuracy and possibility for estimating strains which were not measured. The analytical (mechanical) and approximate (numerical) approaches are adopted as the means of estimation.

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Ключевые слова:

Содержание

Abstract
Introduction
FBG strain sensor
Analytical approach
Approximate approach
Test of the model on a steel beam
Conclusion
Acknowledgment