



J. Cho, J.Y. Kim, D.Y. Kim

Evaluation Method of Dynamic Properties of Structures by Implementation for Structural Health Monitoring

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The dynamic properties are known to be the most important factors in evaluating wind-induced responses. Although computational methods have been remarkably well developed, considerable uncertainties are still remained in FE analysis. To calibrate FE models for predicting more accurate dynamic properties, field measurements was performed to acquire actual natural frequencies with mode shapes for two types of buildings. The measured dynamic properties were compared with the FE modal analysis results to investigate an adequate method of constructing a FE model which is properly used for structural analysis within wind-induced vibration level. To derive more accurate natural frequencies using FE modal analysis, the elastic modulus of on-site concrete, floor slabs, beam-end-offset, and non-structural elements were considered in FE models. Based on comparisons results, some suggestions for constructing FE models were proposed in this study.

Ключевые слова:

Содержание.

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