

具彈簧-質量裝置之雙樑結構系統動態分析測試 = Vibration analysis of two-beam-system connected by spring-mass devices

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摘要

本研究是利用結合理論數值分析之方法，探討一具彈簧 - 質量裝置之雙樑結構系統之動態特性。應用Euler-Bernoulli樑理論推論出雙樑系統之運動方程式及所懸掛質量之運動方程式，並利用轉移矩陣法 (transfer matrix method) 建立彈簧 - 質量系統的矩陣形式，由此可以計算出雙樑結構系統的特徵解(自然頻率及模態)。本研究理論分析結果並與國內外文獻互相驗證。最後，並以實驗方法對此理論模式加以驗證。

關鍵詞：Euler-Bernoulli樑、轉移矩陣、雙彈簧-質量系統、特徵方程式

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