대부하 표적 지향시스템에서 외란보상 적응제어

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Adaptive Disturbance Compensation Control for Heavy Load Target Aiming Systems

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Key Words: target aiming system(표적지향 시스템), stabilization(안정화), disturbance compensation control(외란보상제어), Filtered_x Least Mean Square algorithm(FXLMS 알고리즘), convergence(수렴성), initial estimation(초기추정치)

Abstract : Stabilization error of target aiming systems mounted on moving vehicles is an important performance because the error directly affects hit probability. The disturbance comes from mass unbalance and linear acceleration is a main source of stabilization error. This study suggests an experimental design method FxLMS algorithm used to estimate the compensator coefficients adaptively to improve the stabilization performance. The proposed control is applied to simple experimental setup whichi simulates dynamic characteristics of a real target aiming systems. The feasibility of the proposed technizues is illustrated, along with results of experiment.

무차원 동영향 함수를 이용한 자유단 경계를 가진 임의 형상 평판의 진동해석: 직선 및 곡선 경계가 혼합된 경우

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Free Vibration Analysis of Arbitrarily Shaped Plates with Free Edges Using Non-dimensional Dynamic Influence Functions: the case that straight and curved boundaries are mixed

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Key Words: Non-dimensional dynamics function(무차원동영향함수), Free Plate(자유단평판), Free vibration(자유진동)

Abstract : Free Vibration Analysis by Non-dimensional Influence Function (or NDIF) is extended from circular shaped plates to arbitrarily shaped plates. The indefinite normal direction and concentrated forces at the corner of polygonal plates make it difficult to apply NDIF to polygon. Besides the straight edges make the use of local polar coordinate impossible. This problem is solved by new method that modifies a edge into circular shape and sets a normal direction at a corner to average direction between two edges. The proposed method provides a credible natural frequency and mode shapes for various polygons which accord with those given by an exact method or FEM(ANSYS).