

부가수질량을 고려한 3차원 수중압력선체의
고유진동해석에 관한 연구

A Study on the Free Oscillation Analysis of Characteristics of
3-Dimensional Submerged Vehicle in Consideration Hydrodynamic
Added Mass

이정탁[†](INHA UNIVERSITY)·이강수^{*}(INHA UNIVERSITY)·손충렬^{**}(INHA UNIVERSITY)
LEE JUNG TAK, SON CHOONG YUL and LEE KANG SU

Key Words : Hydrodynamic Added Mass, Free Oscillation Analysis, 3-Dimensional Submerged Vehicle

Abstract : The purpose of this study is to analyze of the vibration characteristic of submerged vehicle to obtain the anti-vibration design data, which could be used in the preliminary design stage data. Underwater pressure hull of submerged vehicle is used as the model of this study. The F.E.M. model is meshed by shell and beam element. Also, considering of the inner hull weight, mass element is distributed in the direction of length. Numerical calculations are accomplished using the commercial B.E.M. code. The characteristics of natural frequency(eigenvalues), mode shape(eigenvectors) and frequency-displacement response are analyzed. The results of this study will be used as the useful design data in preliminary anti-vibration design stage.