

# INTERIOR ACOUSTIC FIELD ANALYSIS OF HYDRAULIC EXCAVATOR'S CABIN BASED ON BEM

Yuan Wang, Jianrun Zhang, Xiaobo Liu and Le Van Quynh

## TÓM TẮT:

Structure finite element model of excavator's cabin is built, and the displacement response of cabin under the external force excitation is analyzed between 20Hz and 200Hz. In the analysis of acoustic characteristic of cabin, the boundary element model of the cabin internal acoustic cavity including the seat is created firstly. Where the result of forced response of the cabin's structure is mapped to the boundary element model of the sound field inside the cavity as boundary condition, and the distribution of internal acoustic field is calculated and sound pressure response at the driver's right ear is obtained. And then, acoustic boundary element grids is divided into different sections according to the corresponding structure section of the cabin to evaluate the contribution of sound pressure level at driver's right ear from each part of cabin.