이방성을 고려한 회전기기 고정자 코어의 동적 모델링

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Dynamic Modeling of the Stator Core of the Electrical Machine Using Anisotropic Characteristics

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Key Words : 고정자(stator), 공진주파수(resonance frequency),

Abstract :

The state core of a motor/generator was modeled using dynamic model updating technique based on the modal testing work. In order to take into account the orthotropic effect of laminated structure the axial, radial and circumferential properties of the solid element were separately varied to match the primary modes of the stator core which were extracted from the modal testing. Comparison of the results after model tuning showed fairly good coincidence with measured data.

FEM과 BEM을 사용한 소리굽쇠 분석

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Tuning Fork Analysis using FEM and BEM

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Key Words : FEM, BEM, Tuning Fork, 3 Dimension, Modal Frequency, Pressure Field

Abstract : An unconstrained tuning fork with a 3-D model has been numerically analyzed by Finite Element Method (FEM) and Boundary Element Method (BEM). The first three natural frequencies were calculated by the FEM modal analysis. Then the change of the modal frequencies was examined with the variation of the tuning fork length and width. Analytical model equations were derived from the numerically relating results of the modal frequency-tuning fork length by approximating minimization. Finally the BEM was used for the sound pressure field calculation from the structural displacement data.