지향성 보청기 성능 검사 장치 개발

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Directional digital hearing aid performance testing system development

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Key Words: Directivity(지향성), Digital Hearing Aid(디지털 보청기).

Abstract : The most recent trend on digital hearing aid is to increase the ratio of signal to noise by directivity or to develop noise reduction algorithm inside DSP IC chip. This paper designed, fabricated and tested a digital hearing aid directivity testing device in which a micro-mouse-like DC motor with a speaker rotates around an examinant. Both ears of the examinant were fixed with ITE hearing aids in order to response to receiving sound. The experimental results were compared with a boundary element method program for verification. The diameter of the directivity testing device was 2m and the micro-mouse was precisely controlled by PIC BASIC micro processor.

타이어 롤링해석을 활용한 타이어마모량 예측에 관한 연구

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Study of Tire Wear Amount Prediction Utilizing the Tire Dynamic Rolling Analysis

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Key Words: Wear(마모), Frictional energy(마찰에너지), Dynamic rolling analysis(롤링해석),
FEM(유한요소법), The weighting factor(가중치)

Abstract : Tire wear of automobile is considered as an important factor to decrease the breaking and cornering performance. However, the tire rubber materials have been developed on an empirical basis up to the present time. Furthermore, one of the most expensive tests is the highway abrasion test. In this aspect, the numerical simulation approach is currently being widely employed. In this paper, we investigated the factors affecting the tire wear based on the mechanism of abrasive wear, and we found that the tire wear is closely related to frictional energy. Accordingly, the frictional energy is computed by utilizing the 3D dynamic rolling analysis of patterned tire. Finally, the amount of tire wear is predicted by correlating frictional energy with the wear equation.