

차량의 롤각 추정기 설계

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Design of a estimator for vehicle roll angle

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Key Words: rollover index(차량전복위험지수), roll estimation(롤추정), model-based estimator(모델 기반 추정기), roll rate sensor(롤각속도센서)

Abstract : This paper presents a method to estimate vehicle roll angle and roll rate for calculating rollover index which indicates a roll danger. An approach using a model-based estimator for estimating roll angle and roll rate of vehicle body with respect to the road is proposed. Simple roll dynamics model for the model-based estimator is described. Measured signals for the roll estimation algorithm are lateral acceleration, yaw rate, vehicle speed and steering angle. While existing roll estimation algorithms use a roll rate sensor, the proposed estimator do not use a roll rate signal. Performance and reliability of the roll estimator under various driving conditions are investigated by computer simulations. Simulation results show that the proposed roll estimator has reliable capability while all wheels are on the ground.

소프트 골프 클럽을 이용한 스윙 동작 분석에 관한 연구

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Studies on Analysis of Swing Motion using Soft Golf Clubs

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Key Words: Soft golf(소프트골프), Soft golf club(소프트골프클럽), Golf swing motion analysis(골프 스윙동작분석), Sports Rehabilitation(스포츠재활)

Abstract : The purpose of this study is to analyze swing motion with soft golf clubs and compare with that with normal golf clubs. The subjects were normal healthy adults. They performed swing motion using a normal golf club and a soft golf club in turn. Then, the swing motion of the subjects was analyzed. The swing motion was tracked by a 3D motion analysis system by Ariel Dynamics Inc. The displacement, the velocity and the acceleration of shoulder, hip, knee and wrist area were recorded. The pattern of swing motion with soft golf club was similar to that with normal golf club. However, we were able to distinguish different characteristic swing patterns in both cases.