

عنوان مقاله:

An Innovative method for Two-Level Autonomous Emergency Braking Algorithm Design

محل انتشار:

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خلاصه مقاله:

Recently Advanced Driver-Assistance Systems (ADAS) have played a decisive role in the automotive active safety system. Autonomous emergency braking (AEB) as one of the features of these systems has been considered in this research. This study defines decision space in a two-level braking AEB algorithm design. The purpose of the two-level braking method is first to give awareness of collision risk by the jerk effect of partial braking and, secondly, to create enough delay for the driver to escape collision by steering. The driving situation regarding two main indexes, the last point to brake (LPB) and the last point to steer (LPS), is analyzed precisely. Then, the decision space is introduced for selecting two key parameters that guarantee collision avoidance. The validation of the developed control algorithm based on the proposed method is evaluated in different scenarios in the computer simulation (IPG-CarMaker environment) and in field tests. The results of tests confirm the effectiveness of the suggested method in both constant speed and accelerated motion

کلمات کلیدی:

(ADAS, AEB, IPG-CarMaker, decision-making algorithm, last point to brake (LPB), last point to steer (LPS)

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