Injury Evaluation Method of Passengers Seated in the Transverse Seat in the Event of a Collision Accident by means of FE Analysis

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In the event of a level crossing accident, train passengers seated in a rotating and reclining seat have a risk of getting injured due to collision with seats in front of them. In order to evaluate the passenger's kinematic behavior and injury quantitatively in this situation, the authors have carried out impact tests using crash-test dummies. In this paper, we performed FE analyses under the same condition as the tests. As a result, the numerical results obtained by the FE analyses by means of a rigid dummy model developed for the automobile were generally consistent with the empirical results of the impact tests in terms of dummy's behavior and injury values.