

**An Estimation of the Severity of Passenger Injuries Seated on a Longitudinal Seat
in a Train Accident and Measures to Mitigate it by Using Numerical Simulation**

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It is of vital importance to enhance on-board passenger safety in the event of a train collision. In order to design the interior fittings to reduce passenger injury levels, it is necessary to examine the probability of such injuries. The purpose of this study is to grasp the severity of injuries the occupants of longitudinal seats suffer and to consider the measures to mitigate it by using FEM simulation. For this simulation, bench-end partition was modeled on the basis of an FEM model. It was found that the passengers seated on a longitudinal seat with a high risk of injuries are those seated second-furthest and third-furthest away from the bench-end partition and that the severity of head injury decreased significantly because of the handrails.