

HIC Simulation: Study of Parameters affecting HIC

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Reliable numerical simulation of HIC tests is one of the most challenging topics for simulation. The HIC value strongly depends on various seat parameters like the backrest mass, backrest design, materials or center of gravity. In addition, the initial position of the dummy (v-ATD) has a non negligible influence.

Some principle methods on how to achieve a robust backrest design in pertinent to HIC are discussed in this paper. The simulations are preformed using data from ergonomic studies, with a standard dummy position and simple backrest configurations prior to any test is preformed. Parameter studies are carried out in early design phase to get a better understanding of HIC performance on the seat. In addition, a benchmark of different HIC configurations is conducted to achieve a promising backrest configuration for test. Finally, the assumptions that were made for simulation are compared and updated to the test data.