

Development of innovative active head restraint system in a car using virtual tools.

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We present the idea of an innovative active headrest system for head and neck protection of an occupant. Its FE model is created and embedded in a model of a small car. The occupant is represented with the virtual human body model Virthuman. Consideration of different side impact scenarios based on EuroNCAP testing protocols, standard and out-of-positions seating leads to more than 100 simulations. The results in terms of injury risk helps to improve the design of the headrest system step-by-step in the process of virtual development.

