

Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

The Influence of Environment Geometry on Injury Outcome: I. Cervical Spine SAAMI J. SHAIBANI, Independent Modeling, Algorithms & Analytical Studies (IMAAS) — Previous studies with some 500 patients have indicated that the forces at particular injury sites of occupants in motor-vehicle accidents cannot be simply related to parameters for the occupant or the impact.[1-2] Another factor that might play a role is assessed in this research, namely passenger compartment geometry, which in most low-severity insults involves the seating arrangement and the restraint system. Analysis of the former is achieved here by considering the heights, lengths and angles of the seat cushion and seat back. The separate effect of geometric environment on the potential for neck injury is then found from studying only those cases with isometric occupants in isokinetic impacts. Such stringent constraints require the matching of numerous data fields, thus reducing the number of suitable candidates quite significantly. However, enough cases remain from the large population available for a proper evaluation to be undertaken. 1. Effect of occupant and impact factors on forces within neck, Bull Am Phys Soc, 45, 1018 (2000). 2. within low back, Bull Am Phys Soc, 46, 1174 (2001).

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Date submitted: 28 Nov 2005

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