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DANIEL E. TOOMEY, M.S.E., P.E.

Professional Specialization

Performance and design analysis of motor vehicle systems, subsystems and components, including restraint systems, seating systems, and chassis systems. Biomechanics of automotive injury including mechanisms of injury and human injury tolerance. Accident analysis and reconstruction for passenger vehicles, including occupant kinematics, computer simulation and photogrammetry. Modeling, analysis, simulation and control of dynamic systems. System and component testing, including test fixture design, instrumentation, data reduction and analysis.

Professional Background

B.S.E. (Mechanical Engineering), University of Michigan-Ann Arbor

M.S.E. (Mechanical Engineering) University of Michigan-Dearborn

Ph.D. Candidate (Biomedical Engineering) in Impact Biomechanics, Wayne State University
Traffic Accident Reconstruction, Northwestern University Traffic Institute

Senior Project Engineer,

Design Research Engineering

Project Engineer,

Design Research Engineering

Engineering Co-op,

TRW Automotive Chassis Systems

Registered Professional Mechanical Engineer, Michigan #6201056035

Cum Laude, University of Michigan

Pi Tau Sigma, National Mechanical Engineering Honor Society - Pi Rho Chapter (University of Michigan)

Member, Society of Automotive Engineers

SAE World Congress Technical Paper Reviewer - Occupant Protection & Biomechanics

Publications

“Exploring the Role of Lateral Bending Postures and Asymmetric Loading on Cervical Spine Compression Responses,” 2009 ASME International Mechanical Engineering Congress & Exposition, IMECE2009-12911, (w. M. Mason, W. Hardy, K. Yang, J. Kopacz and C. VanEe)

“Vehicle Chassis, Body, and Seat Belt Buckle Acceleration Responses in the Vehicle Crash Environment,” *SAE Int. J. Passeng. Cars – Mech.Syst.* 2(1): 1151-1170, 2009. Paper No. 2009-01-1246 (with E. Paddock, E. Winkel, and R. Burnett).

“Evaluation of Seat Belt Assembly Physical Evidence in Properly Functioning and Intentionally Disabled Retractor Demonstrations,” SAE Paper No. 2009-01-1245 (with M. Klima and E. Cooper).

“Vehicle Rollover Recovery Using Active Steering/Wheel Torque Control,” *International Journal of Vehicle Design* 46(1) : 51-71, 2008 (with T. Shim, C. Ghike, and H. Sardar).

“Safety Restraint System Physical Evidence and Biomechanical Injury Potential Due to Belt Entanglement” SAE Paper No. 2006-01-1670 (with C. VanEe and M. Klima).

“Seat Belt Retractor Performance Evaluation in Rollover Crashes,” *SAE 2005 Transactions -. J. Passeng. Cars – Mech.Syst.* Section 6 – Vol 114: 2016-2023, 2005. Paper No. 2005-01-1702 (with M. Klima and M. Weber).

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“Seat Belt Buckle Performance in High Energy Wheel-to-Ground Impacts,” *SAE 2005 Transactions - J. Passeng. Cars – Mech.Syst.* Section 6 – Vol 114: 2034-2041, 2005. Paper No. 2005-01-1709 (with M. Klima and M. Weber).

“Investigation of Active Steering/Wheel Torque Control at the Rollover Limit Maneuver,” ,” *SAE 2004 Transactions. J. Passeng. Cars – Mech.Syst. .* Section 6 – Vol 113: 1133-1140, 2004. Paper No. 2004-01-2097 (with Taeyhun Shim).

Guest Lecturer

“Exploring the Role of Lateral Bending Postures and Asymmetric Loading on Cervical Spine Compression Responses”, 2009 ASME International Mechanical Engineering Congress & Exposition, Lake Buena Vista, FL, November 2009.

“Vehicle Chassis, Body, and Seat Belt Buckle Acceleration Responses in the Vehicle Crash Environment,” Society of Automotive Engineers, 2009 World Congress, Detroit, MI, April 2009.

“Investigation of Active Steering/Wheel Torque Control at the Rollover Limit Maneuver,” Society of Automotive Engineers, 2004 Automotive Dynamics Stability Conference, Detroit, MI, May 2004.

