

Scientific Program

ORAL PRESENTATIONS

Tuesday, May 20, 2003

Technical Session: Vehicle Rollover Stability and Rollover Crash Protection

Time: 09:00 - 12:30 hours

Room: Track A: Hall 1

Chairperson: Riley Garrett

Paper No.222-O

A methodology for estimating vehicle rollover propensity

Shane Richardson, Raphael Grzebieta, Monash University
Department of Civil Engineering

George Rechnitzer — Monash University Accident Research
Centre, Australia

Paper No.202-O

Simulation of Occupant Kinematics in Vehicle Rollover - Dummy Model versus Human Model

Norbert Praxl, Markus Schönpflug, Jiri Adamec, Institute for Legal
Medicine, Munich, Germany

Paper No.231-O

Crash Attributes that Influence the Severity of Rollover Crashes

Kennerly Digges, Ana Maria Eigen, National Crash Analysis
Center, The George Washington University, United States

Paper No.236-O

MADYMO Modeling Method of Rollover Event and Occupant Behavior in Each Rollover Initiation Type

Hideo Takagi, Akihisa Maruyama, Nissan Motor Co., Ltd.
Koichi Kawaguchi TNO-Automotive, Japan

Jeff Dix, Nissan Technical Center, North America Inc.
United States

Paper No.254-O

Vehicle rollover - An important element in multiple impact crashes

Paul Fay, Ford Motor Company
Richard Frampton, Vehicle Safety Research
Centre, Loughborough University, United Kingdom

Raimondo Sferco, Automotive Safety Office, Ford Motor
Company, Germany

Paper No.288-O

Multibody Analysis Of M3 Bus Rollover: Structural Behaviour and Passenger Injury Risk

Paolo Martella, Giovanni Belingardi, Lorenzo Peroni, Davide
Gastaldin, Politecnico di Torino, Italy

Paper No.321-O

Rollover Resistance Test Procedure Involving Maximum Roll Momentum

Brian Kebschull, Dynamic Research, Inc.

Marc Ernst, Honda R&D Americas, Inc., United States
Keisuke Ishii, Honda R&D Co., Ltd., Japan

Paper No.342-O

Status of NHTSA's Ejection Mitigation Research Program

Donald Willke, Stephen Summers, National Highway Traffic
Safety Administration

J. Stephen Duffy, Allison E.Louden, Jeffrey C.Elias,
Transportation Research Center, Inc. United States

Paper No.383-O

Safety Systems To Reduce The Rollover Risk Of Vehicles

Helmut Fennel, Continental Teves, Germany

Paper No.436-O

The Importance of Dynamic Testing in Determining the Yaw Stability of Vehicles

Don Stevens, Stephen Arndt, Safety Engineering and
Forensic Analysis, Inc.

Mark Arndt, Transportation Safety Technologies, Inc.
L. Daniel Metz, Metz Engineering and Racing, United States

Paper No.444-O

Heavy Trucks Rollover Simulation

Yves Delanne, Laboratoire Central des Ponts et Chaussées
(LCPC)

Vincent Schmitt, Etablissement Technique d'Angers (ETAS)
France

The 18th ESV Technical Agenda

Paper No.488-O

An Overview of NHTSA's Recent Light Vehicle Dynamic Rollover Propensity Research and Consumer Information Program

Garrick Forkenbrock, W. Riley Garrott, Patrick Boyd
US Department of Transportation, National Highway Traffic Safety
Administration, United States

Paper No.548-O

Development of Rollover Curtain Shield Airbag System

Hiroyuki Takahashi, Motomi Iyoda, Masami Aga, Makoto
Sekizuka, Youichi Kozuru, Shuichi Ishimoto, Toyota Motor
Corporation, Japan

ORAL PRESENTATIONS
Tuesday, May 20, 2003

Technical Session: *Compatibility in Frontal/Side Collisions

Time: 09:00 - 12:30 hours

Room: Track B: Hall 2

Chairperson: Peter O'Reilly

Paper No.402-O

Status Report of IHRA Compatibility and Frontal Impact Working Group

Peter O'Reilly, Department for Transport, United Kingdom

Paper No.113-O

Research on Vehicle Compatibility in Japan

Koji Mizuni, National Traffic Safety and Environmental

Research Laboratory

Kazumasa Tateishi, Yuji Arai, Japan Automobile Research Institute

Toshiyuki Nishimoto, Ministry of Land, Infrastructure and Transport, Japan

Paper No.307-O

NHTSA's Research Program for Vehicle Compatibility

Stephen Summers, William Hollowell, A Ioke Prasad
National Highway Traffic Safety Administration, United States

Paper No.346-O

EEVC Research in the Field of Improvement of Crash Compatibility Between Passenger Cars

Eberhard Faerber, Federal Highway Research Institute, Germany

Paper No.274-O

Australian Research to Support the IHRA Vehicle Compatibility Working Group

Keith Seyer, Craig Newland, Mark Terrell, Department of Transport and Regional Services, Australia

Paper No.86-O

Development of Test Procedures and Performance Criteria to Improve Compatibility in Car Frontal Collisions

Mervyn Edwards, Huw Davies, Adrian Hobbs, TRL Limited (Transport Research Laboratory), United Kingdom

Paper No.287-O

Improvement of Compatibility of Passenger Vehicles- Next feasible steps

Thomas Schwarz, Robert Zobel, Volkswagen AG, Germany

Paper No.437-O

A Study of Compatibility Test Procedures in Frontal Impact

Satoshi Takizawa, Tomiji Sugimoto, Hideki Suzuki, Honda R&D Japan

Paper No.94-O

New front structural design to improve compatibility

Pascal Delannoy, Teuchos Group - Renault Safety Department

Jacques Faure, Renault. SA, France

Paper No.454-O

Compatibility for frontal impact collisions between heavy and light cars

Shigeru Hirayama, Kazuhiro Obayashi, Tomosaburo Okabe
Nissan Motor Co., Ltd., Japan

Paper No.412-O

Perspectives on Vehicle Crash Compatibility and Relationship to Other Safety Criteria

Mukul Verma, Joseph Lavelle, Robert Lange, General Motors
United States

Paper No.445-O

Numerical fleet optimization studies for improved compatibility

Paul Lemmen, Cor van der Zweep, Floris Leneman, TNO
Automotive

Paul Altamore, TNO-MADYMO North America, United States

Paper No.117-O

Combining The Finite Element Models Of The Ford Falcon And Subaru Legacy To Improve Vehicle Compatibility

Ming Loo, Ford Motor Company of Australia Ltd

Tim Stinton, Bruce Priddle, Ford Motor Company

Keith Seyer, Department of Transport and Regional Services
Australia

Paper No.239-O

Innovative body structure for the self-protection of a small car in a frontal vehicle-to-vehicle crash

Masuhiro Saito, Tetsuya Gomi, Yoshinori Taguchi, Takeshi Yoshimoto, Tomiji Sugimoto, Honda R&D Co., Ltd, Tochigi R&D Center, Japan

ORAL PRESENTATIONS
Tuesday, May 20, 2003

Technical Session: NCAP Related To Existing Test Procedures

Time: 09:00 - 12:30 hours

Room: Track C: Room 431 & 432

Chairperson: Keith Rodgers

Paper No.244-O

What we learned from JNCAP and our proposals

Yuji Ono, National Organization for Automotive Safety & Victims' Aid

Yuji Kimura, Ministry of Land, Infrastructure and Transport

Koji Mizuno, National Traffic Safety and Environment Laboratory, Japan

Paper No. 65-O

Impacts of Recent Korean NCAP Programs in Automotive Safety

Younghan Youn, Korea University of Technology and Education
Gyuhyun Kim, Geejoong Yong, Korea Automotive Testing and Research Institution

Insik Kwon, Ministry of Construction and Transportation, Republic of Korea

Paper No.469-O

Australian NCAP Future Strategy

Lauchlan McIntosh, Australian NCAP, Australia

Paper No.470-O

ANCAP Future Technical Directions

Christopher Coxon, Australian NCAP, Australia

Paper No.120-O

Proposition of a method to evaluate active safety handling qualities

Eric Fenaux, PSA Peugeot Citroen, France, Metropolitan

Paper No.351-O

Crash Testing For Real-World Safety – What Are The Priorities For Casualty Reduction?

Pete Thomas, Richard Frampton, Vehicle Safety Research Centre, United Kingdom

Paper No.192-O

A review of 'B'-pillar and front seat belt loads measured in ANCAP offset frontal crash tests.

James Hurnall, Australian Automobile Association

Angus Draheim, Queensland Department of Transport

Michael Case, Julian Del Beato, Royal Automobile Club of Victoria, Australia

Paper No.527-O

Evaluation of Vehicle Stiffness Measures from the U.S. New Car Assessment Program

Jesse Swanson, Taryn Rockwell, Nathaniel Beuse, Brian Park, Stephen Summers, Lori Summers, National Highway Traffic Safety Administration, United States

ORAL PRESENTATIONS

Tuesday, May 20, 2003

Technical Session: Real World Data Acquisition, Injury Risk Assessment

Time: 14:00 - 17:30 hours

Room: Track A: Hall 1

Chairperson: Koshiro Ono

Paper No.102-O

Effect of Vehicle and Crash Factors on Older Occupant Injury

Rory A. Austin, Barbara M. Faigin, National Highway Traffic Safety Administration, United States

Paper No.161-O

Scientific Approach and Methodology of a New In-depth Investigation Study in Germany so called GIDAS

Dietmar Otte, Accident Research Unit Medical
Christian Krettek, Medical University Hannover
Horst Brunner, Hans Zwipp, Technical University Dresden, Germany

Paper No.175-O

SARAC - Safety Rating Based on Real-World Crashes for Supplementation of New Car Assessment Programs

Klaus Langwieder, Comité Européen des Assurances (CEA), German Insurance Association (GDV), Germany
Brian Fildes, Max Cameron, Monash University Accident Research Center, Australia
Timo Ernvall, Helsinki University of Technology Transportation Engineering, Finland

Paper No.233-O

Essential Components of a Statistically Valid Crashworthiness Rating

Jens-Peter Kreiss, Technical University of Braunschweig
Sebastian Busch, Robert Zobel, Accident Research, Volkswagen AG, Germany

Paper No.348-O

Moped and mofa accidents in the Netherlands from 1999-2001: accident and injury causation.

Ydo de Vries, Dimitri Margaritis, Herman Mooi
TNO Automotive, Netherlands

Paper No.361-O

Pan-European Co-ordinated Accident and Injury Databases

Andrew Morris, Pete Thomas, Vehicle Safety Research Centre
United Kingdom

Paper No.404-O

Combining Crash Recorder and Paired Comparisons Technique: Injury Risk Functions in Frontal and Rear-end Impacts with Special Reference to Neck Injuries

Anders Kullgren, Maria Krafft, Folksam Research
Anders Lie, Swedish National Road Administration
Claes Tingvall, Swedish National Road Administration and Monash University Accident, Research Centre, Sweden

Paper No.409-O

Applications of the Crash Injury Research and Engineering Network (CIREN) Database

Catherine McCullough, National Highway Traffic Safety Administration
Jingfei Wu, Volpe National Transportation Systems Center, United States

Paper No.416-O

An Overview of Knee-Thigh-Hip Injuries in Automobile Crashes in the United States

Shashi Kuppa, National Highway Traffic Safety Administration
Osvaldo Fessehaie, Information Systems & Services, Inc., United States

Paper No.422-O

Fire Safety Performance of Motor Vehicles in Crashes

Kennerly H. Digges, R. Rhoads Stephenson, Motor Vehicle Fire Research Institute
Paul Bedewi, FHWA/NHTSA National Crash Analysis Center, The George Washington University, United States

Paper No.490-O

Estimating Crash Severity: Can Event Data Recorders Replace Accident Reconstruction?

Hampton Gabler, Carolyn Hampton, Rowan University
Thomas Roston, U.S. National Highway Traffic Safety Administration, United States

Paper No.496-O

Distinctive Feature of Traffic Accidents and In-depth Investigation In Japan

Miyake Tetsushi, Institute for Traffic Accident Research and Data Analysis, Japan

The 18th ESV Technical Agenda

ORAL PRESENTATIONS

Tuesday, May 20, 2003

Technical Session: Advanced Technology #1: Passive Restraint Systems

Time: 14:00-17:30 hrs

Room: Track B: Hall 2

Chairperson: Anders Lie

Paper No.414-O

The Performance of Advanced Airbag-equipped Vehicles in Frontal Crashes

Matthew Maltese, Alope Prasad, Nathaniel Beuse, William T. Hollowell, National Highway Traffic Safety Administration, United States

Paper No.206-O

Development of occupant classification system

Tsutomu Takano, Nissan Motor Co., LTD, Japan

Paper No.480-O

Research of an advanced seat belt system

Koichi Kamiji, Hiroshi Akaba, Honda R&D, Japan

Paper No.189-O

Development of Pre-Crash Active Seatbelt System

Hideo Tobata, Hideo Takagi, Chinmoy Pal, Shunichi Fukuda
Nissan Motor Co., LTD., Japan

Paper No.314-O

Continuously Predicting Crash Severity

Dorel Sala, J.T. Wang, General Motors Corporation, United States

Paper No.198-O

The effect of occupant protection by controlling airbag and seatbelt

Teru Iyota, Toshihiro Ishikawa, Mazda Motor Corporation, Japan

Paper No.481-O

Fundamental Relation between Firetime and Impact Severity Estimation Uncertainty

Guglielmo Rabbio, Laura Di Domenico, Guy Nusholtz
DaimlerChrysler, United States

Paper No.406-O

Reducing Highway Deaths and Disabilities with Automatic Wireless Transmission of Serious Injury Probability Ratings from Vehicles in Crashes to EMS

Howard Champion, Uniformed Services University of the Health Sciences

Jeffrey Augenstein, University of Miami

Alan Blatt, Veridian

Brad Cushing, Maine Medical Center

Kennerly Digges, George Washington University

Richard Hunt, State University of New York, Upstate

Medical University

Louis Lombardo, National Highway Traffic Safety Administration

John Siegel, University of Medicine and Dentistry of New Jersey United States

Paper No.512-O

Two-Impact Crashes - Implications for Occupant Protection Technologies

James Lenard, Richard Frampton, Vehicle Safety Research Centre, United Kingdom

Paper No.451-O

Benefits of a 3+2 point belt and an inboard torso side support in frontal, far side and rollover crashes

Ola Bostrom, Yngve Haland, Autoliv Research, Sweden

Paper No.547-O

Achieving design target through stochastic impact simulations

Tsuyoshi Yasuki, Masaaki Okamoto, Atsushi Okamoto

Toyota Motor Corporation, Japan

Paper No.248-O

Performance of Seating Systems in FMVSS No. 301 Rear Crash Tests

James Saunders III, Louis Molino, Shashi Kuppa, Felicia Mckoy

National Highway Traffic Safety, United States

ORAL PRESENTATIONS

Tuesday, May 20, 2003

Technical Session: *Biomechanics #1:
Injury Criteria and Dummy Development

Time: 14:00-17:30 hrs

Room: Track C: Room 431 & 432

Chairperson: Rolf Eppinger

Paper No.578-O

IHRA Biomechanics Working Group Status Report

Rolf Eppinger, National Highway Traffic Safety Administration,
United States

Paper No. 125-O

The Upper-Body Response of Thor in Frontal Barrier Tests

Douglas Longhitano, John Turley, Honda R&D Americas, Inc.
United States

Paper No.421-O

Design Requirements for a Fifth Percentile Female Version of the THOR ATD

T. Shams, T.J. Huang, N. Rangarajan, GESAC, Inc.
M. Haffner, National Highway Traffic Safety Administration, United
States

Paper No.354-O

Response characteristic of various side impact dummies

Masaomi Goto, Takahiko Uchimura, Kazumi Hisajima
Nissan Motor Co., Ltd, Japan

Paper No.388-O

Updated Biofidelity Rating of the Revised WorldSID Prototype Dummy

Edmund Hautmann , BMW Group
Klaus Bortenschlager, Germany Audi, Germany
Risa Scherer, Ford, Akihiko Akiyama, Honda
Minoru Sakurai, Takeshi Harigae, JARI, Japan
Martin Page, CEESAR, France
Greg Kostyniuk, Lan Xu, DaimlerChrysler, United States
Suzanne Tyko, Transport Canada, Canada

Paper No.398-O

Lumped Spring-Mass Model of ES-2 dummy and Parametric Evaluation of Design Variables to Improve Side Impact Performance

Murthy Kowsika, Yibing Shi, Guy Nusholtz, DaimlerChrysler
United States

Paper No.195-O

A Study of Whiplash Injury Occurrence Mechanism Using Human Finite Element Model

Junji Hasegawa, Toyota Motor Corporation, Japan

Paper No.203-O

Developing a new seat systems to reduce whiplash injuries by K-D neck model (a new biomechanical cervical model)

Masatoshi Tanaka, Daihatsu Motor Co.,Ltd
Hiroaki Yoshida, Sadami Tsutsumi, Kyoto University Institute for
Frontier, Medical Sciences, Japan

Paper No.208-O

Development of a Finite Element Model of the Human Neck for Whiplash Simulation

Seiichi Kobayashi, Yuichi Kitagawa, Nissan Motor Co., Ltd.
Japan

Paper No.344-O

Validation of Neck Injury Criteria Using Reconstructed Real-Life Rear-end Crashes with Recorded Crash Pulses

Anders Kullgren, Maria Krafft , Folksam Research
Linda Eriksson, Autoliv Sweden and Chalmers , University of
Technology
Ola Boström, Autoliv Research, Sweden

Paper No.99-O

A Comparison of Injury Criteria Used in Evaluating Seats for Whiplash Protection

Allan Tencer, Sohail Mirza, Phillipe Huber, University of
Washington, United States

Paper No.229-O

The Role of Seatback and Head Restraint Design Parameters on Rear Impact Occupant Dynamics

Michael Kleinberger, Liming Voo, Andrew Merkle, Matthew,
Shin-Sung Chang Bevan, Johns Hopkins University Applied
Physics Laboratory
Felicia McKoy, Computer Systems Management, Inc., United
States

Paper No.504-O

An evaluation of existing and proposed injury criteria with various dummies to determine their ability to predict the levels of soft tissue neck injury seen in real world accidents

Frank Heitplatz, Raimondo Sferco, Joerg Reim, Ford of Germany,
Germany

Paul Fay, Ford of Britain, United Kingdom
Agnes Kim, Priya Prasad, Ford of US, United States

ORAL PRESENTATIONS

Wednesday, May 21, 2003

Technical Session: Advanced Technology #2: Driver-Vehicle Safety/Driver Performance

Time: 09:00-12:30 hrs

Room: Track A: Hall 1

Chairperson: Bernd Friedel

Paper No.170-O

Drivers' load of voice interaction system in vehicles

Yonosuke Miki, Nissan Motor Co., Ltd, Japan

Paper No.145-O

Development of a Technology to Prevent Deviation from the Intended Lane when Turning Using Vehicle Dynamics Control

Kyuyong (Keiyuu) Kim (Kin), Hiroshi Sekine, Honda R&D Co.,Ltd.
Osamu Yano, Hiroyuki Sugishita, PSG Co., Ltd., Japan

Paper No.529-O

A Lane Keeping Assist System for Passenger Cars -Design Aspects for the Driver Interface

Jochen Pohl, Jonas Ekmark, Volvo Car Corporation, Sweden

Paper No.405-O

Rear-end Collision Avoidance Assist System

Kenji Kodaka, Makoto Otabe, Yoshihiro Urai, Hiroyuki Koike
Honda R&D Tochigi Center, Japan

Paper No.267-O

Broadside collision scenarios at uncontrolled intersections

Machiko Hiramatsu, Hideo Obara, Hiroshi Ueno, Kenjou
Umezaki, Nissan Motor Co.,Ltd, Japan

Paper No.181-O

Safety of light commercial vehicles in the light of the results of real world crashes and laboratory testing

Alexander Berg, Peter Ruecker, DEKRA Automobil GmbH
Raimondo Sferco, Tilman Schriever, Ford Motor Company
Germany
Paul Fay, Ford Motor Company, United Kingdom

Paper No.522-O

Driver Performance Evaluation of Two Rear Parking Aids

Shane McLaughlin, Jon Hankey, Virginia Tech Transportation
Institute
Charles Green, Raymond Kiefer, General Motors, United States

Paper No.381-O

**Assessing the Safety Benefit of Automatic Collision
Avoidance Systems**

Beshr Sultan, Mike McDonald, University of Southampton, United
Kingdom

Paper No.259-O

**Evaluation of Indirect Tire Pressure Monitoring Systems
Using Data from NHTSA's Tire Pressure Special Study**

Kristin Thiriez, National Highway Traffic, Safety Administration
United States

Paper No.84-O

**The safety impact of substituting manual operation of in-
vehicle tasks with voice control**

Arihiro Isomura, Mitsubishi Motors Corporation, Japan

Paper No.423-O

**Rider acceptance of advanced safety technology. A basic
requirement for improved safety. Concept, experience and
results of a multimedia communication campaign on antilock
motorcycle brakes**

Hubert Koch, Dr.Koch Consulting GmbH, Germany

Paper No.410-O

**PRE-SAFE - The next Step in the Enhancement of Vehicle
Safety**

Rodolfo Schoeneburg, Karl-Heinz Baumann, Rainer Justen
DaimlerChrysler AG, Germany

The 18th ESV Technical Agenda

ORAL PRESENTATIONS

Wednesday, May 21, 2003

Technical Session: *Developments in Side Impact Protection

Time: 09:00-12:30 hrs

Room: Track B: Hall 2

Chairperson: Keith Seyer

Paper No.579-O

IHRA – Side Impact Working Group Status Report

Keith Seyer, Chairman, IHRA Side Impact Working Group, Australia

Paper No.328-O

Investigation of new side impact test procedures in Japan

Hideki Yonezawa, National Traffic Safety and Environment Laboratory

Minoru Sakurai, Takeshi Harigae, Japan Automobile Research Institute

Toshiyuki Nishimoto, Ministry of Land Infrastructure and Transport

Hiroko Minda, Japan National Traffic Safety and Environment Laboratory, Japan

Paper No.138-O

Development of a European Side Impact Interior Headform Test Procedure

Michiel van Ratingen, TNO Automotive

Ton Versmissen, Safety, TNO Automotive, Netherlands

Adrian K. Roberts, Richard W. Lowne, TRL, United Kingdom

Ulf Lechelt, Volvo Cars, Sweden

Tobias Langner, BASt, Germany

Paper No.172-O

Insurance Institute for Highway Safety Side Impact Crashworthiness Evaluation Program: Impact Configuration and Rationale

Gregory J. Dakin, Raul A. Arbelaez, Joseph M. Nolan,

David S. Zuby, Adrian K. Lund, Insurance Institute for Highway Safety, United States

Paper No.492-O

NHTSA Side Impact Research: Status and Update

Randa Radwan Samaha, Department of Transportation/ National Highway Traffic Safety Administration

Daniel S. Elliott, Abacus Technology Corporation, United States

Paper No.126-O

The development of the Advanced European Mobile Deformable Barrier Face (AE-MDB).

Adrian Roberts, EEVC WG13, United Kingdom

Paper No.530-O

Ejection through side windows: relevance and countermeasures

Vittorio Giavotto, Politecnico di Milano, Italy

Paper No.100-O

Side Airbag Deployments in the UK – Initial Case Reviews

Alan Kirk, Andrew Morris, Vehicle Safety Research Centre United Kingdom

Paper No.219-O

The role of impact velocity and change of velocity in side impacts

Claes Tingvall, Anders Lie, Swedish National Road Administration

Maria Krafft, Anders Kullgren, Folksam Research

Claes Tingvall, Swedish National Road Administration

and Monash University Accident Research Centre, Sweden

Paper No.266-O

Side Impact Sled Test Methodology for Investigation to Reduce Injury Index

Hitoshi Ikeno, Mafuyu kada, Naoyuki uzuki, Mitsubishi Motors Corporation, Japan

Paper No.447-O

Countermeasures to Address Far-Side Crashes: First Results

Brian Fildes, Monash University Accident Research Centre

Laurie Sparke, Holden, Australia

Ola Bostrom, Autoliv Research, Sweden

Paper No.448-O

Validating Lower Limb Injury Mechanisms in Side Impact Crashes

Naomi Arndt, Raphael Grzebieta, Roger Zou, Department of Civil Engineering, Monash University, Australia

ORAL PRESENTATIONS

Wednesday, May 21, 2003

Technical Session: Improved Safety for Vulnerable Road Users

Time: 09:00-12:30 hrs

Room: Track C: Room 431 & 432

Chairperson: Yoshiyuki Mizuno

Paper No.580-O

IHRA-Summary of IHRA Pedestrian Safety Working Group Activities (2003)

Yoshiyuki Mizuno, Japan Automobile Standard, Japan

Paper No.289-O

Effects of Vehicle Front Design Parameters on Pedestrian Head-Brain Injury Protection

Jikuang, Yang, Department of Machine and Vehicle, Sweden

Paper No.378-O

Development of a Biofidelic Pedestrian Legform Impactor

Atsuhiko Konosu, Japan Automobile Research Institute

Masaaki Tanahashi, Japan Automobile Manufacturers Assoc., Japan

Paper No.429-O

Evaluation of the response of computational and physical pedestrian knee joint models to bending and shear loading

Kavi Bhalla, Dipan Bose, N.Jane Madeley, Jason Kerrigan,

Jeff Crandall, University of Virginia, Douglas Longhitano, Honda R&D Americas, Inc, United States

Yukou Takahashi, Honda R&D Co.,Tochigi R&D Center, Japan

Paper No.503-O

Introduction of the Regulation of Pedestrian Head Protection in Japan

Toshiyuki Nishimoto, Ministry of Land, Infrastructure and Transport, Japan

Paper No. 151-O

Development of Finite Element Model for Child Pedestrian Protection

Masayoshi Okamoto, Yukou Takahashi, Honda R&D Co., Ltd. Tochigi center

Masahito Hitosugi, Dokkyo Univ. School of Medicine

Fumie Morie, PSG Co., Ltd., Japan

Jane Madeley, Johan Ivarsson, Jeff Crandall, University of Virginia, United States

Paper No.468-O

Pedestrian crash reconstruction using multi-body modeling with geometrically detailed, validated vehicle models and advanced pedestrian injury criteria

Lex van Rooij, Kavi Bhalla, Mark Meissner, Johan Ivarsson, Jeff Crandall, University of Virginia

Douglas Longhitano, Honda R&D Americas, Inc. United States

Yukou Takahashi, Yuuji Kikuchi, Honda R&D Co., Ltd., Japan

Paper No.165-O

Development of Future Pedestrian Protection Technologies

Tetsuo Maki, Toshiyuki Asai, Nissan Motor Co., Ltd., Japan

Janusz Kajzer, Kabimec Consulting, Sweden

Paper No.142-O

Estimation of benefits resulting from impactor-testing for pedestrian protection

Alexander Berg, Markus Egelhaaf, DEKRA Automobil GmbH

Ebner Hans-Thomas, VDA Frankfurt, Germany

Paper No.157-O

Modeling of a Motorcycle for Collision Simulation

Motoaki Deguchi, Yamaha Motor Co., Ltd., Japan

Paper No.40-O

FE Simulations of Car -Motorcycle Frontal Crashes, Validation and Observations

ANoop Chawla, Sudipto Mukherjee, Dinesh Mohan, Dipan Bose, Prakash Rawat, Indian Institute of technology, Delhi, India

Tamotsu Nakatani, Minoru Sakurai, Japan Automobile Research Institute, Japan

ORAL PRESENTATIONS

Wednesday, May 21, 2003

Technical Session: *Advanced Intelligent Technologies - ITS

Time: 14:00-17:30 hrs

Room: Track A: Hall 1

Chairperson: Ian Noy

Paper No.581-O

IHRA – Report of Working Group on Intelligent Transport Systems (ITS)

Ian Noy, Peter C. Burns, Transport Canada, Canada

Paper No.242-O

State-of-the-art of the SNRA/JARI/BAST joint research on driver workload measurement within the framework of IHRA-ITS

Christhard, Gelau, Federal Highway Research Institute
Georg, Jahn, Josef F. Krems, Chemnitz University of Technology
Germany
Hitoshi Uno, Japan Automobile Research Institute, Japan
Kircher Albert, Joakim Ostlund, Nilsson Lena, VTI, Sweden

Paper No.261-O

The effectiveness of ESP (Electronic Stability Programme) in reducing real life accidents

Claes Tingvall, Swedish National Road Administration And
Monash University Accident Research Centre
Maria Krafft, Anders Kullgren, Folksam Research
Anders Lie, Swedish National Road Administration, Sweden

Paper No.305-O

Using Parameter Optimization To Characterize Driver Performance in Rear -End Driving Scenarios

August Burgett, Bob Miller, National Highway Traffic Safety
Administration, United States

Paper No.308-O

Characterization of a Single-Vehicle Road Departure Avoidance Maneuver

Peter Martin, August Burgett, Gowri Srinivassan
National Highway Traffic Safety Administration, United States

Paper No.211-O

Development of ACC For Vehicle With Manual Transmission
Kenta Kubota, Nissan Motor Co., Ltd, Japan

Paper No.334-O

Market Response to Adaptive Cruise Control
Satoru Yahagi, Yoko Yanaj, Nissan Motor Co., Ltd, Japan

Paper No.352-O

A Balanced Active and Passive Safety Technology Concept for new Vehicle Generations
Klaus Werkmeister, Nils Borchers, BMW Group, Germany

Paper No.356-O

Simulation of Driver, Vehicle and Environmental Aspects of Crash Initiation - A New Method to Improve Integrated Safety Effectiveness

Robert Wood, Abs Dumbuya, Qian Zhao, Traffic Modelling and
Simulation Group, United Kingdom
Canada
Pete Thomas, Julian Hill, Vehicle Safety Research Centre, United
Kingdom

Paper No.188-O

Safety Evaluation of Forward Obstacles Collision Avoidance Support Service using Driving Simulator

Kiichi Yamada, Takashi Wakasugi, Automobile Research
Institute, Japan

Paper No.392-O

Potential Effects of Automatic Crash Notification (ACN) on Air Medical Services: Trauma Scene Transport Utilization Patterns

Alan Blatt, Marie Flanigan, Veridian, Brooke Lerner, University of
Rochester Medical Center
Dietrich Jehle, Erie County Medical Center
Louis Lombardo, National Highway Traffic Safety Administration,
United States

Paper No.80-O

Protecting Small Cars and Severe Crashes-Smart Structure Solution

Saad Jawad, University of Hertfordshire, United Kingdom

ORAL PRESENTATIONS
Wednesday, May 21, 2003

Technical Session: Child Restraint Systems

Time: 14:00-17:30

Room: Track B: Hall 2

Chairperson: Jac Wismans

Paper No.85-O

Relative Degradation of Safety to Children when Automotive Restraint Systems are Misused

Simone Lalande, France Legault, Transport Canada

Jocelyn Pedder, RONA Kinetics and Associates Ltd., Canada

Paper No.275-O

Child safety: whose move is it?

Cees Huijskens, TNO Automotive

Ronald Vroman, Consumentenbond, Netherlands

Paper No.420-O

Differences in Air Bag Performance with Children in Various Restraint Configurations and Vehicle Types

Rajiv A. Menon, Kristy B. Arbogast, The Children's Hospital of Philadelphia

John Cooper, Mohannad Murad, Stephen A. Ridella, Richard Barnes, Automotive Occupant Restraints Council

Michael J. Kallan, Flaura K. Winston, The University of Pennsylvania, United States

Paper No.474-O

Evaluation of child restraints for Holden Commodores

Judith Charlton, Brian Fildes, Ted Olsson, Niklas Truedsson

Monash University Accident Research Centre

Stuart Smith, Jo Kobus, Holden Ltd

Paul Kelly, Consultant, Australia

Paper No-495-O

The significance of ISOFIX in reducing misuse-Analysis of potential on the basis of field observations and sled tests

Klaus Langwieder, Thomas Hummel, Fritz Finkbeiner, Thomas Roselt, German Insurance Association; Institute for Vehicle Safety Germany

Paper No.345-O

Investigation of the Protection of Children in Minibuses and Coaches

Rachel Grant, Ruth Welsh, Alan Kirk, Vehicle Safety Research Centre, United Kingdom

Paper No.193-O

Protecting Children in Car Crashes: the Australian Experience

Michael Paine, Vehicle Design & Research

Michael Griffiths, Julie Brown, Road Safety Solutions

Michael Case, Royal Automobile Club of Victoria

Owen Johnstone, National Roads and Motorists Association, Australia

Paper No.241-O

Child Restraint System Assessment Program in Japan

Yuji Ono, Takahiro Hosono, National Organization for Automotive Safety & Victims' Aid

Yuji Kimura, Ministry of Land, Infrastructure and Transport

Osamu Takatori, Japan Automobile Research Institute, Japan

Paper No.302-O

Special Crash Investigations of Restrained Child Occupants

JoAnn Murianka, Michael Parsons, US Dept. of Transportation

United States

ORAL PRESENTATIONS
Wednesday, May 21, 2003

**Technical Session: *Biomechanics #2:
Injury Criteria and Dummy Development**

Time: 14:00-17:30

Room: Track C: Room 431 & 432

Chairperson: Dominique Cesari

Paper No.306-O

Injury Survivability

Peter Martin, Rolf Eppinger, National Highway Traffic Safety Administration, United States

Paper No.473-O

Analysis of Computer Models for Head Injury Investigation

Ramesh Dwarampudi, Liying Zhang, King Yang, Bioengineering Center, Wayne State University
Rolf Eppinger, National Highway Traffic Safety Administration
United States

Paper No.78-O

The Development of an Injury Criteria for Axial Loading to the THOR-Lx Based on PMHS Testing

David Hynd, Claire Willis, Adrian Roberts, Richard Lowne
TRL Limited
Richard Hopcroft, Paul Manning, W Angus Wallace, University of Nottingham, United Kingdom

Paper No.160-O

Assessment of the Biofidelity Thor and Hybrid III ATD Knee-Thigh-Hip Complexes in Frontal Impacts

Jonathan Rupp, Matthew Reed, Nathaniel Madura, Lawrence Schneider, University of Michigan Transportation Research Institute
Shashi Kuppa, National Highway Traffic Safety Administration
United States

Paper No.491

Fifth Percentile Female Hybrid III and Thor-FLx Performance in Sled Tests with Toepan Intrusion

Rodney Rudd, Jeff Crandall, Greg Shaw, University of Virginia
United States

Paper No.343-O

New Method For Biofidelity Evaluation of Dummy Necks

Willinger Remy, Bourdet Nicolas, Fischer Raphael, Strasbourg University
Le Gal Francois, TREVES, Reims, France

Paper No.333-O

Modification and Validation of Human Neck Model under Direct Head Loading

Susumu Ejima, Koshiro Ono, Kunio Yamazaki, Japan Automobile Research Institute
Adam Wittek, Toyota Central Research and Development Laboratories (Study done at JARI), Japan

Paper No. 425-O

Development of an Advanced 50th Percentile Male Head/Neck System for Application to Crash Test Dummies

T.J. Huang, T. Shams, GESAC, Inc.
M. Haffner, R. Eppinger, National Highway Traffic Safety Administration, United States

Paper No.218-O

Advanced FE Lower Limb Model for Pedestrians

Yukou Takahashi, Yuji Kikuchi, Honda R&D Co., LTD.
Fumie Mori, PSG Co., LTD.
Atsuhiko Konosu, Japan Automobile Research Institute, Japan

Paper No.322-O

Validation of the Human Head FE Model against Pedestrian Accident and Its Tentative Application to the Examination of the Existing Tolerance Curve

Yasuhiro Dokko, HONDA R&D Co.,Ltd., Japan
Robert Anderson, Jim Manavis, Peter Blumburghs, Jack McLean
The University of Adelaide, Australia
Liying Zhang, King Yang, Albert King, Wayne State University
United States

Paper No.72-O

Development of an Age-Dependent Thoracic Injury Criterion for Frontal Impact Restraint Loading

Richard Kent, Jim Patrie, University of Virginia
Christina Mullen, Toyota Motor Corporation, United States
Frederique Poteau, University of Virginia, France
Fumio Matsuoka, Toyota Motor Corporation, Japan

Paper No.82-O

Eye Injury Incidence and Mechanisms in Frontal Automobile Crashes

Stefan Duma, Mary Jernigan, Joel Stitzel, Ian Herring, Virginia Tech, United States

The 18th ESV Technical Agenda

Paper 141-O

Airbag Deployments and Ocular Injuries of Occupants

Kunihiro Takahashi, Keio University, Department of Mechanical Engineering

Naoyuki Suzuki, Ryoji Nakahama, Mitsubishi Motors Corporation

Ken Suzuki, Tomohiro Tobar, Hiroki Takahashi, Takahiro Nakai, Graduate School of Keio University

Yuuichi Takizawa, Hiroo Yabe, Toho University, Department of Ophthalmology, Japan

ORAL PRESENTATIONS

Thursday, May 22, 2003

Session: Safety of Heavy Trucks, Buses and Truck Tires

Chairperson: Cezary Szczepaniak

Room: Track A: Hall 1

Paper No.215-O

HGV Cab Strength

James Anderson, Cranfield Impact Centre Ltd, United Kingdom

Paper No.217-O

Universal Coach Safety Seat

Majid Sadeghi, Cranfield Impact Centre Ltd, United Kingdom

Paper No.243-O

Analysis of Large Truck Accidents in Japan

Kouhei Akiyama, Hino Motors.Ltd, Japan

Paper No.296-O

Passenger Casualties in Non-Collision Incidents on Buses and Coaches in Great Britain

Alan Kirk, Loughborough University
Rachel Grant, Richard Bird, Vehicle Safety Research Centre
United Kingdom

Paper No.341-O

Passive Safety of Trucks in Frontal and Rear Collisions with Cars

Alexander Berg, Michael Krehl, DEKRA Automobil GmbH
Lars Riebeck, Dr. Ulrich Breitling, MAN Nutzfahrzeuge AG
Germany

Paper No.363-O

Frontal Collision Safety of Bus Passengers in Japan

Hiroyuki Mitsubishi, Yoshihiro Sukegawa, Japan Automobile
Research Institute
Shungo Okano, Japan Automobile Manufactures Association,
Inc.
Hirokazu Nagase, Japan Auto-Body Industries Association Inc.
Japan

Paper No.225-O

An Analysis of Heavy Truck Occupant Protection Measures

Alrik Svenson, National Highway Traffic Safety Administration
Vasanth Krishnaswami, Daniel Blower, University of Michigan
Transportation Research Institute, United States

Paper No.230-O

Research to Evaluate Safety Technologies for Vulnerable Fuel Tanks

Kennerly Digges, Automotive Safety Research Institute
Edward Fournier, Matthew Keown, Jim Kot, Nicholas
Shewchenko, Biokinetics and Associates Ltd., Canada

Paper No.284-O

Frontal Occupant Safety Simulations for Coach and Bus Passengers

Cees Huijskens, Mark Schrooten, Peter de Coo, TNO
Automotive, Netherlands

Paper No.313-O

Large School Bus Safety Restraint Evaluation – NHTSA

Jeffrey Elias, Transportation Research Center, Inc.
Linda McCray, Lisa Sullivan, National Highway Traffic Safety
Administration, United States

Paper No.359-O

Protection of bus drivers in frontal collisions

Matyas Matolcsy, Scientific Society of Mechanical
Engineering, Hungary

Paper No.497-O

Active Safety Of Trucks And Road Trains With Wide Base Single Tyres on Drive Axles Instead Of Twin Tyres

Klaus-Peter Glaeser, Federal Highway Research Institute
Germany

Paper No.536-O

Enhanced Safety Of Heavy Vehicles By Use Of Automatic Control Devices

Markus Muser, Working Group on Accident Mechanics, Zurich
Kai-Uwe Schmitt, University and Swiss Federal Institute of
Technology, Switzerland
Wolfram Hell, Institute for Vehicle Safety – GDV, Munich,
Germany
Cezary Szczepaniak, Technical University of Lodz
Andrzej Szosland, Vehicle Research Institute, Technical
University of Lodz, Poland

ORAL PRESENTATIONS

Thursday, May 22, 2003

Technical Session: Developments in Frontal Impact Protection

Time: 09:00-12:30

Room: Track B: Hall 2

Chairperson: Danius Dalmotas

Paper No.214-O

Whiplash injuries, not only a problem in rear end impact

Hans Cappon, Jac Wismans, Michiel van Ratingen, TNO Automotive, Netherlands

Wolf Hell, Dina Lang, German Institute for Vehicle Safety Germany

Mats Svensson, Chalmers University of Technology, Sweden

Paper No.282-O

Designing The Front Frame Rail For Increased Energy Absorption in A Front Offset CAE Analysis

Sameer Gupta, Honda R & D Americas, Inc., United States

Paper No.426-O

Development of an Optical Occupant Position Sensor System to Improve Frontal Crash Protection

Dr. Tie-Qi Chen, Dr. David S. Breed, Krista Xu, Automotive Technologies International, United States

Paper No.399-O

Evaluation of Crash Types Associated With Test Protocols

Carl Ragland, National Highway Traffic Safety Administration United States

Paper No.427-O

Injury Risks from Advanced Air Bags in Frontal Static Out-of-Position Tests

Aloke Prasad, Vehicle Research and Test Center
Matthew Maltese, National Highway Traffic Safety Administration
Allison Loudon, Transportation Research Center, Inc, United States

Paper No.514-O

Optimal frontal vehicle crash pulses - A numerical method for design

Yibing Shi, Jianping Wu, Guy Nusholtz, DaimlerChrysler, Corporation, United States

Paper No.501-O

Crash Pulse Modeling for Vehicle Safety Research

Michael Varat, Stein Husher, KEVA Engineering, United States

Paper No.400-O

Effect of Frontal Crash Pulse Variations on Occupant Injuries

Steve Mark, Honda R&D Americas, Inc., United States

Paper No.323-O

An Extendable and Retractable Knee Bolster

J. T. Wang, A. L. Browne, General Motors, United States

Scientific Program

WRITTEN PAPERS

Technical Session: Vehicle Rollover Stability and Rollover Crash Protection

Chairperson: Riley Garrott

Paper No.216-W

Influence of Passengers During Coach Rollover

James Anderson, Majid Sadeghi, Cranfield Impact Centre Ltd
United Kingdom

Paper No.368-W

Rollover Crashes - Real World Studies, Tests and Safety Systems

Alexander Berg, Michael Krehl, DEKRA Automobil GmbH
Rolf Behling, Michael Helbig, Autoliv GmbH, Germany

Paper No.419-W

An Investigation of Occupant Injury in Rollover: NASS-CDS Data Analysis of Injury Severity and Source by Vehicle Type and Rollover Attributes

Paul Bedewi, Daniel Godrick, Kennerly Digges, George Bahouth -
FHWA/NHTSA National Crash Analysis Center, The George
Washington University, United States

Technical Session: *Compatibility in Frontal/Side Collisions

Chairperson: Peter O'Reilly

Paper No.238-W

Parameter optimization for vehicle-to-vehicle crash compatibility using Finite Element Methods

In Taek Lee, Katsutoshi Ainaka, Minoru Yubuchi, Junki Saiki,
Altair Engineering Ltd, Japan

Paper No.364-W

Estimating relative driver fatality and injury risk according to some characteristics of cars using matched-pair multivariate analysis

Jean-Louis Martin, Yves Derrien, Bernard Laumon, INRETS
France

Paper No.393-W

NHTSA's Review of High-Resolution Load Cell Walls' Role in Designing for Compatibility

Matthew Jerinsky, William T. Hollowell, National Highway Traffic
Safety Administration, United States

Paper No.413-W

Vehicle-to-Vehicle Full Frontal Compatibility Crash Optimization Using a CAE-Based Methodology

Xiaowei Li, Philip Przybylo, Priya Prasad, Saeed Barbat
Ford Motor Company, United States

Paper No.507-W

Vehicle Incompatibility Affects Occupant Extrication after Motor Vehicle Crashes

Frank Pintar, Narayan Yoganandan, Medical College of
Winconsin
John Olshanski, Safe and Fast Extrication, Inc, United States

Paper No.518-W

Vehicle Front Structure in Consideration of Compatibility

Shinji Fujii, Mazda Motor Corporation, Japan

Technical Session: Real World Data Acquisition, Injury Risk Assessment

Chairperson: Koshiro Ono

Paper No.150-W

Benefit potential of ESP in real accident situations involving cars and trucks

Klaus Langwieder, Johann Gwehenberger, Thomas Hummel
German Insurance Association; Institute for Vehicle Safety
Germany

Paper No.232-W

Crash Attributes that Influence Aortic Injuries in Near-Side Crashes

Jeffrey Augenstein, William Lehman Injury Research Center
Kennerly Digges, Jessica Steps, National Crash Analysis Center,
The George Washington University
Kazuo Higuchi, Takata Corporation, United States
Tadayuki Ato, Takata Corporation, Japan

The 18th ESV Technical Agenda

Paper No.252-W

Large Truck Crash Causation Study in the United States
Gary Toth, Gregory Radja, Kristin Thiriez, Joseph Carra
National Highway Traffic Safety Administration, United States

Paper No.256-W

NHTSA's Tire Pressure Special Study, February 2001
Kristin Thiriez, Nancy Bondy, National Highway Traffic
Safety Administration, United States

Paper No.260-W

**Real-world Accident Data Coordinated Methodologies for
Data Collection to Improve Vehicle and Road Safety**
Pete Thomas, James Lenard, Andrew Morris, Vehicle Safety
Research Centre, United Kingdom

Paper No.285-W

**Change of Velocity And Crash Pulse Characteristics In Rear
Impacts: Real World Data and Vehicle Tests**
Astrid Linder, Matthew Avery Thatcham, The Motor Insurance
Repair Research Centre, United Kingdom
Krafft Maria, Anders Kullgren, Folksam, Sweden

Paper No.299-W

Air Bag Crash Investigations
John Kindelberger, Augustus "Chip" Chidester, Eric Ferguson
National Center for Statistics and Analysis, National Highway
Traffic Safety Administration, United States

Paper No.353-W

**On The Spot Crash Investigations in the UK: New Insights for
Vehicle Safety Research**
Richard Cuerden, TRL Limited
Julian Hill, Vehicle Safety Research Centre, United Kingdom

Paper No.403-W

NHTSA's Vehicle Parameter and Crash Test Databases
Catherine McCullough, Barbara Hennessey, National Highway
Traffic Safety Administration, United States

Paper No.439-W

**Review of Car Frontal Stiffness Equations for Estimating
Vehicle Impact Velocities**
Tao Jiang, Raphael Grzebieta, George Rechnitzer, Xiao-Ling
Zhao, Department of Civil Engineering, Monash University
Shane Richardson, DV Experts, Australia

Paper No.467-W

**Methodology for the Development and Validation of Injury
Predicting Algorithms**
Jeffrey Augenstein, Elana Perdeck, James Stratton
William Lehman Injury Research Center
Kennerly Digges, George Bahouth, The George Washington
University
Peter Baur, BMW NA, United States
Nils Borchers, BMW AG, Germany

Paper No.494-W

**New Accident Research System of German Insurers and
Highlights of the Main Topics**
Dieter Anselm, GDV Loss Prevention Commission
Klaus Langwieder, German Insurance Association; Institute for
Vehicle Safety, Germany

Paper No.500-W

Estimating the Lives Saved by Seat Belts and Air Bags
Donna Glassbrenner, Joseph Carra, National Highway Traffic
Safety Administration, United States

Technical Session:

Advanced Technology #1: Passive Restraint Systems

Chairperson: Anders Lie

Paper No.144-W

**A Seat Belt Buckle Pretensioner and Load-Limiter Combo
Device**
J. T. Wang, Qing Zhou, General Motors, United States

Paper No.224-W

Seat component to prevent whiplash injury
Kai-Uwe Schmitt, Marco Heggendorf, Peter Niederer
Institute of Biomedical Engineering, University and Swiss Federal
Institute of Technology, Zurich
Markus Muser, Felix Walz, Working Group on Accident
Mechanics, Zurich, Switzerland

Technical Session:

Advanced Technology #2: Driver-Vehicle Safety/Driver Performance

Chairperson: Bernd Friedel

Paper No.179-W

**Overhead Capacitive Sensing System For Driver Alertness
Self-Monitoring**
Philip Kithil, Advanced Safety Concepts, Inc., United States

The 18th ESV Technical Agenda

Paper No.340-W

A Study on driver behavior during braking on open road

Mohamed Kassaagi, Guillaume Brissart, Laboratory of Accidentology, Biomechanics and human behaviour PSA Peugeot Citroen - RENAULT
Jean-Christophe Popieul, Laboratory of Industrial and Human Automation, Mechanics and Computer, France

Paper No.456-W

Measuring and Modeling of Driver for Detecting Unusual Behavior for Driving Assistance

Yasuo Sakaguchi, Ken'ichiro Takiguchi, Research Institute of Human Engineering for Quality Life
Masayuki Okuwa, Toyota Central R&D Labs., Inc.
Motoyuki Akamatsu, National Institute of Advanced Industrial Science and Technology, Japan

Paper No.506-W

A Study on the Onset Timing of Collision Avoidance Assistance System for Minimizing the Over-reliance on the System

Keisuke Suzuki, Japan Automobile Research Institute, Japan

Paper No.541-W

Analysis of VSC's effectiveness from accident data

Masami Aga, Toyota Motor Corporation, Japan

Paper No.542-W

An Estimation Methods for Emergency Handling Performance

Kenichi Kitahama, Masami Aga, Toyota Motor Corporation, Japan

Technical Session: Improved Safety for Vulnerable Road Users

Chairperson: Yoshiyuki Mizuno

Paper No.58-W

Crash Simulations of a 3 w heeled scooter taxi (TST)

Anoop Chawla, Dinesh Mohan, Sudipto Mukherjee, Jasvinder Singh, Nadeem Rizvi, Indian Institute of Technology, Delhi, India

Paper No.79-W

Simulation of 2-wheeled Rider to Car Accident scenarios, using an adapted LS-DYNA pedestrian humanoid

William McLundie, Cranfield University, United Kingdom

Paper No. 207-W

Human Body Detection Technology by Thermoelectric Infrared Image Sensor

Masaki Hirota, Yasushi Nakajima, Masanori Saito, Makoto Uchiyama, Nissan Motor, Japan

Paper No. 237-W

Computational Simulation for Head Impact on Vehicle Hoods Using the Precise Finite Element Model

Nobuhiro Iwai, Nissan Motor Co., Ltd., Japan

Paper No.247-W

Recent Trends In Fatal Motorcycle Crashes

Umesh Shankar, US Department of Transportation, National Highway Traffic Safety Administration, NPO-121, United States

Paper No.271 -W

Evaluation of pedestrian protection structure using impactors and full-scale dummy test

Toshihiro Ishikawa, Mazda Motor Corporation, Japan

Paper No. 294-W

Development of Plastic Components for Pedestrian Head Injury Risk Reduction

Brian Boggess, Jenny Wong, Steve Mark, Honda R&D Americas, Inc., United States

Paper No.335-W

Development of LS-DYNA FE Models for Simulating EREV Pedestrian Impact

Mark Neal, Heui-Su Kim, Jenne-Tai Wang, General Motors
Takanobu Fujimura, Katsumi Nagai, Suzuki Motor Corporation, Japan

Paper No.443-W

Development of ISO Pedestrian Child and Adult Head-Form Impactors

Yasuhiro Matsui, Akira Sasaki, Adam Wittek, Masaru Takabayashi, Hiroyuki Jimbo, Japan Automobile Research Institute

Kimiaki Nimura, ESTECH CO., Ltd.

Yoshihiro Ozawa, JASTI CO., Ltd., Japan

Paper No.466-W

The danger to young pedestrians from reversing motor vehicles

Michael Paine, Vehicle Design and Research

Adam Macbeth, Insurance Australia Group

Michael Henderson, Michael Henderson Research, Australia

The 18th ESV Technical Agenda

Paper No.499-W

A review and development of the IHRA pedestrian model

Mike Neale, Brian Hardy, Graham Lawrence, TRL Limited, United Kingdom

Paper No.140-W

A Review of Pediatric Pedestrian Injuries at a Level I Trauma Center

William Woods, Christopher Sherwood, Johan Ivarsson, University of Virginia, United States

Paper No.272-W

An advanced testing procedure for the pedestrian-car - collision

Matthias Kuehn, Robert Froeming, Volker Schindler, Technical University of Berlin, Germany

Paper No.543-W

Development of Night View System

Yoichi Iwata, Kunihiko Toyofuki, Yasuo Hagsato, Toyota Motor Corporation, Japan

Paper No.544-W

Development of Pre-Crash Safety System

Koichi Fujita, Takaaki Enomoto, Ryotaro Kachu, Hideki Kato, Hiroaki Fuinami, Kiyotaka Moriizumi, Vehicle Engineering Division Vehicle Safety, Japan

Paper No.545-W

Pre-Crash Sensor For Pre-Crash Safety

Setsuo Tokoro, Kaushi Kuroda, Tomoki Nagao, Tomoya Kawasaki Electronics Engineering, Japan

Technical Session:

***Advanced Intelligent Technologies - ITS**

Chairperson: Ian Noy

Technical Session:

Child Restraint Systems

Chairperson: Jac Wismans

Paper No.582-W

Development of ASV in Japan

Katsutoshi Ishida, Shinichi Yamada, Road Transport Bureau, Ministry of Land, Infrastructure and Transport, Japan International Affairs Office, Safety and Engineering Department, Japan

Paper No.109-W

Onboard Road Obstacles Detection in Night Condition Using Binocular CCD Cameras

Raphaël Labayrade, Didier Aubert, Sio Song Ieng, Laboratory on the Interactions between Infrastructure, Vehicle and Driver (LIVIC - INRETS/LCPC), France

Paper No.121-W

An Investigation of Side Impact Testing Methodologies for Child Restraint Systems using Finite Element Simulations

Jesus Monclus-Gonzalez Spain, Royal Automobile Club of Spain Spain
Dhafer Marzougui, George Bahouth, Azim Eskandarian, FHWA/NHTSA National Crash Analysis Center, United States

Paper No.166-W

Accuracy in the obstacle localisation using vision

Glaser Sebastien, Rudy Alix, Laboratoire Central des Ponts et Metropolitan Chaussées, France

Paper No.122-W

Spanish CRS Use and Effectiveness Survey Results

Jesus Monclus-Gonzalez, Royal Automobile Club of Spain, Spain

Paper No.459-W

Merging lateral cameras information with proprioceptive sensors in vehicle location gives centimetric precision

Sio-Song Ieng, Dominique Gruyer, institut National de recherche sur les transports et leur securite

WRITTEN PAPERS

Technical Session:

*Biomechanics: Injury Criteria and Dummy Development

Chairperson: Rolf Eppinger/Dominique Cesari

Paper No.68-W

How injury criteria correlate with the injury risk - a study analysing different parameters with respect to whiplash injury

Markus Muser, Working Group on Accident Mechanics, Zurich
Kai-Uwe Schmitt, University and Swiss Federal Institute of Technology, Switzerland
Wolfram Hell, Institute for Vehicle Safety – GDV, Munich, Germany

Paper No.76-W

Biofidelity Impact Response Requirements For An Advanced Mid-Sized Male Crash Test Dummy

Birgitte van Don, Michiel van Ratingen, TNO Automotive Netherlands
Francois Bermond, Catherine Masson, Philippe Vezin, INRETS, France
David Hynd, Claire Owen, TRL, United Kingdom
Luis Martinez, INSIA, Spain
Stephan Knack, BASf, Germany

Paper No.115-W

The Strain-Rate Dependence of Mechanical Properties of Rabbit Knee Ligaments

Sota Yamamoto, Akinori Saito, Kei Nagasaka, Satoshi Sugimoto, Koji Mizuno, Eiichi Tanaka, Nagoya University
Masaki Kabayama, Matsusita Electric Works, Ltd., Japan

Paper No.417-W

Development of Neck Injury Assessment Criteria for the ISO 13232 Motorcyclist Anthropometric Test Dummy With the Revised Neck

R. Michael Van Auken, John W. Zellner, Scott A. Kebschull, Kenneth D. Wiley, Dynamic Research, Inc.
Terry A. Smith, Protection Research Laboratory, United States
Nicholas Shewchenko, Biokinetics and Associates Ltd., Canada
Nicholas M. Rogers, International Motorcycle Manufacturers Association, Switzerland

Paper No.418-W

An Improved Dummy Neck for the ISO 13232 Motorcyclist Anthropomorphic Test Dummy

Christopher Withnal, Nicholas Shewchenko, Biokinetics and Associates Ltd., Canada

Kenneth D. Wiley, Dynamic Research Inc., United States
Nicholas M. Rogers, International Motorcycle Manufacturers Association, Switzerland

Paper No.483-W

ADVISER: a software tool for evaluation and rating of numerical models in crash safety analyses

Jack van Hoof, TNO Automotive, Netherlands
Kambiz Kayvantash, Mecalog, France
Roberto Puppini, CRF, Italy
Hans Baldauf, BMW, Germany
Charles Oakley, TRL, United Kingdom

Technical Session:

Developments in Frontal Impact Protection

Chairperson: Danius Dalmotas

Paper No.520-W

Study on Fuel Leakage Measurement System for Fuel Cell Vehicles

Hiroyuki Mitsuishi, Yohsuke Tamura, Jinji Suzuki, Koichi Oshino, Shogo Watanabe, Japan Automobile Research Institute, Japan

Paper No.264-W

A Fundamental Study of Frontal Oblique Offset Impacts

Hidetsugu Saeki, Tetsuo Maki, Hiroyuki Miyasaka, Maki Ueda
Nissan Motor Co., Ltd., Japan

Paper No.327-W

A study for fast analysis method of vehicle body structure for offset crash

Hirofumi Deguchi, Naoyuki Suzuki, Ryoji Nakahama, Mitsubishi Motors Corporation, Japan