

# SAE Papers

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Die SAE (**S**ociety of **A**utomotive **E**ngineers) ist ein 1905 in den USA gegründeter Verein mit mehr als 138000 Ingenieuren vergleichbar dem VDI (Verein Deutscher Ingenieure), beschränkt sich aber auf den Bereich der Mobilitätsindustrie. Neben der Ingenieursweiterbildung und diversen Publikationen wird die Erarbeitung von Standards und Normen vorangetrieben.



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## Kontakt

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## Vehicle Accident Reconstruction: Technology and

## **Animation**

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Auf dem jährlich abgehaltenen Weltkongress beschäftigt sich eine kleine Untersektion mit Unfallrekonstruktion. Früher brachte die SAE jährlich einen Tagungsband *Vehicle Accident Reconstruction, Technology and Animation* heraus. Dieser hatte etwa DIN-A4-Format, war daumendick und kostete rund \$100.

## **SAE Accident Reconstruction Technology Collection**

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Etwa seit dem Jahr 2000 gibt es die komplette Sammlung sämtlicher jemals eingereichter Papers als Sammlung auf CDs. Die Beiträge bis einschließlich 1998 sind meist gescannt, teilweise allerdings in miserabler Qualität (Stand 2002). Die Beiträge ab 1999 wurden direkt in PDFs konvertiert. Als Benutzeroberfläche für den Zugriff auf die Papers dient Folio Views (jetzt Fast Folio), das die Suchergebnisse sehr ansprechend jeweils mit Abstract darstellt und direkt zu den PDFs verlinkt. Neben der Volltextsuche sind die Papers auch verschlagwortet.

Die Sammlung kann man hier bestellen. Der Download des auf der gleiche Webseite angebotenen freien Demos lohnt sich kaum. Man lädt im Wesentlichen das Produkt Folio Views herunter, mit einigen wenigen Beispieldaten aus sehr verschiedenen Betätigungsfelder des SAE. (PDFs sind erst recht nicht dabei.) Man gewinnt über den Download (für den man sich als Benutzer registrieren lassen muss) bestenfalls einen Eindruck von der gekonnt gestalteten Oberfläche von Folio Views.

Hier kann die Sammlung mit über 1900 (Stand 02/2015) SAE-papers aus über 50 Jahren zum Fachgebiet *Accident Reconstruction* käuflich erworben werden kann. Die Sammlungen sind ab 2010 auch erhältlich mit Beschränkung auf das jeweilige Kalenderjahr:

- 2010 (25 papers): <http://collections.sae.org/coll-tp-00008/>
- 2011 (9 papers): <http://collections.sae.org/coll-tp-00134/>
- 2012 (29 papers): <http://collections.sae.org/coll-tp-00253/>
- 2013 (22 papers): <http://collections.sae.org/coll-tp-00327/>
- 2014 (15 papers): <http://collections.sae.org/coll-tp-00393/>
- 2015

## **SAE Stapp Car Crash Conference Proceedings**

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Das Werk erscheint auf CDs sowie als gebundene Ausgabe. Die CDs - zumindest die mir vorliegende Version aus 1996 - enthalten einen Viewer ("SAE Move"), mit dem man die Daten (es handelt sich um gescannte Seiten) auf den CDs lesen kann. Diese US-amerikanische Konferenz wird wohl seit 1955 einmal jährlich abgehalten. Die aktuelle (12/2007) CD-Sammlung Stapp CD 2006 soll mehr als 1.150 technical papers von 1966 - 2006 enthalten und kostet \$378,-.

## **SAE Standards**

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Mittlerweile (Stand 2015) gibt es mehr als 2600 Normen für Landfahrzeuge ("Ground Vehicle Standard", GV-standard auch bekannt als J-Report). Bekanntestes Beispiel dürfte die

Klassifizierung von Motorölen nach SAE J300 sein.

- <http://www.sae.org/standards/>
- <http://de.sae.org/standards/>

## **SAE Technical Papers**

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Freitextsuche in Titel und abstract: <http://papers.sae.org/browse/> oder <http://www.sae.org/search/>

Die SAE-Papers sind fortlaufend nummeriert, sodass einzig die Angabe der Nummer das Paper eindeutig bezeichnet. Die Nummerierung beginnt stets mit der Jahreszahl, die bis 1999 zweistellig war. Die nachfolgende Auflistung ist nicht annähernd vollständig. Wie bei der Beschreibung der Artikel im VuF ist die Inhaltsangabe zum jeweiligen Paper nicht einfach eine Übersetzung des Abstracts, sondern eine Zusammenfassung aus Sicht des jeweiligen Wiki-Autors.

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### **1965**

- 650491 The Dynamic Stiffness of a Pneumatic Tire Model

### **1966**

- 660080 Auto-Pedestrian Collision Experiments

### **1968**

- 680016 Analytical Approach to Automobile Collisions

### **1971**

- 710855 Strength and response of the human neck. Mertz, H.J.; Patrick, L.M.
- 710861 Smaller Vehicle versus Larger Vehicle Collisions

### **1972**

- 720284 Data Retrieval by Accident Reconstruction for Safer Vehicle Design
- 720961 Development and Validation of a Computer Simulation of a Crash Victim in Three

## Dimensions

- 720968 Car Crash Collision Types and Passenger Injuries in Dependency upon Car Construction (Field Studies of the German Automobile Insurance Companies)

## 1973

- 730980 Computer Program for Reconstruction of Highway Accidents

## 1974

- 740299 Consistency Study for Vehicle Deformation Index
- 740565 Energy Basis for Collision Severity
- 741177 Experiment and Accident: Comparison of Dummy Test Results and Real Pedestrian Accidents
- 741179 Results of Selected Applications to Actual Highway Accidents of SMAC Reconstruction Program

## 1975

- 750891 An Historical Overview of Research in Traffic Accident Investigation Activities
- 750893 A Comparison of Results Obtained With Different Analytical Techniques for Reconstruction of Highway Accidents
- 750894 Automated Accident Reconstruction
- 751154 Car-to-Car Side Impacts: Computerized Crash Reconstruction
- 751165 Pedestrian Vehicle Accident Simulation Through Dummy Tests
- 751167 Simulation of Collisions Between Pedestrians and Vehicles Using Adult and Child Dummies

## 1976

- 760030 Frequency Response of Tires-Slip Angle Lateral Force
- 760339 The Astro Spiral Jump - An Automobile Stunt Designed via Computer Simulation
- 760775 Stability Considerations in the Mathematical Reconstruction of Traffic Accidents
- 760776 Computer Aids for Accident Investigation

## 1977

- 770013 Characterization of Vehicle Deceleration Time Histories in the Analysis of Impact Dynamics
- 770014 An Impact Moment Coefficient for Vehicle Collision Analysis
- 770015 Computer Simulation of Car-To-Car Collisions
- 770103 Human Factors in Motorcycle Accidents

- 770591 Dynamic Validation of a Computer Simulation for Vehicle Crash
- 770920 Collision Characteristics and Injuries to Motorcyclists and Moped Drivers

## **1978**

- 780670 Mathematical Modeling of Occupant Biomechanical Stress Occuring During a Side Impact
- 780902 The Accuracy and Usefulness of SMAC
- 785033 Truck Collisions With Personal Motor Vehicles and Starting Points for the Improvement of Personal Protection
- 785045 Compatibility in Frontal Collisions

## **1979**

- 790134 X-Ray Study of the Human Neck During Voluntary Motion
- 790994 Bus Roll Over Accident Simulation
- 791030 A 30 mph Front/Rear Crash with Human Test Persons
- 791025 Further Validation of the Simulation Model of Automobile Collisions Program

## **1980**

- 800174 Microcomputer Programs Useful for Aspects of Accident Reconstruction
- 800354 Comparison of Visual Recognition Time of Analogue and Digital Displays in Automobiles
- 800523 Evaluation of the Brake-Force Distribution and Its Influence on the Braking Performance of light Commercial Vehicles
- 801308 Occupant Velocity Change in Side Impact Method of Calculation-Application to a Sample of Real-World Crashes
- 801314 A Review of Different Kinematic Forms in Two-Wheel- Accidents-Their Influence on Effectiveness of Protective Measures

## **1981**

- 810012 Motor Vehicle Non-Crash Fires
- 810473 Development and Evaluation of the CRASH 2 Program for Use under European Conditions
- 810475 Static-to-Dynamic Amplification Factors for Use in Lumped-Mass Vehicle Crash Models
- 811011 Twenty-Five Years of Stapp Car Crash Conferences
- 811023 Risk and Effectiveness of Seat Belts in Munich Area Automobile Accidents
- 811024 Pedestrian Post-Impact Kinematics and Injury Patterns
- 811425 Aerodynamic Effects to a Bicycle Caused by a Passing Vehicle

## **1982**

- 820079 Computer Simulation of Suspension Abuse Tests Using ADAMS
- 820140 Three-Wheel Passenger Vehicle Stability and Handling
- 820170 A Graphic Computer Simulation of the Pedestrian Vehicle Impact
- 820171 A Comparison between Two Different Computer Simulations in Measuring the Vehicle/Pedestrian Impact
- 820246 The Role of the Vehicle Front End in Pedestrian Impact Protection
- 820303 Stability and Performance Analysis of Automobile Driver Steering Control
- 820304 The Fitting of Linear Models to Driver Response Records
- 820305 Closed Loop Automobile Maneuvers Using Preview-Predictor Models
- 820306 Closed Loop Automobile Maneuvers Using Describing Function Models
- 820412 Nighttime Visibility of Various Types of Road Markings; A Study on Durability, Including Conditions of Rain, Fog and Dew
- 820414 Nighttime Driving and Visual Degradation
- 820416 The Visibility Distance of a Car-Driver in Driving Situation
- 821169 Accuracy and Sensitivity of CRASH

## **1983**

- 830053 Reconstruction of Actual Car-Pedestrian Collisions with Dummy and Cadavers
- 830060 MADYMO Pedestrian Simulations
- 830186 Comparison of Pedestrian Kinematics and Injuries in Staged Impact Tests with Cadavers and Mathematical 2D Simulations
- 830189 Experimental Reconstruction and Mathematical Modelling of Real World Pedestrian Accidents
- 830468 Impact Analysis of Two-Vehicle Collisions
- 830564 Visibility from Motor Vehicles
- 830610 Improvements to the SMAC Program
- 830612 Friction Applications in Accident Reconstruction
- 830625 Design Aspects of Energy Absorption in Car Pedestrian Impacts
- 830633 Some Vehicle Factors Related to Type and Severity of Pedestrian Injuries
- 831620 Head Impacts with Roof-Pillar Support Structures - Problem Identification
- 831622 The Trajectories of Pedestrians, Motorcycles, etc., Following a Road Accident

## **1984**

- 840250 Friction Factors for Motorcycles Sliding on Various Surfaces
- 840396 Diagnosis of Seat Belt Usage in Accidents
- 840855 An Overview of Major Occupant Simulation Models
- 840856 The Daimler-Benz Mathematical Isohumane Simulation Model (ISM)

- 840857 Three Applications of a Mathematical Model, PRAKIMOD, in Frontal Collisions
- 840858 Simulation of a Two-Car Oblique Side Impact Using a Simple Crash Analysis Model
- 840868 IMPACT—Integrated Multiple Program for Accident Crash Trauma
- 841663 Influence of Vehicle Front Geometry on Impacted Pedestrian Kinematics
- 841664 Comparison of Experimental Car-Pedestrian Collisions Performed with Various Modified Side-Impact Dummies and Cadavers
- 845017 A Contribution to Risk Analysis and the Characteristics of Truck Accidents
- 845019 Vehicle Deceleration Pulse Characterization By Harmonic Analysis
- 845023 The Collision Behaviour of a Vehicle When Considered as a Multiple Mass System

## **1985**

- 850066 Representation of Actual Reconstruction Methods for Car-to-Car Accidents; as Confirmed by Crash Tests
- 850094 Motorcycle Collisions with Passenger Cars - Analysis of Impact Mechanism, Kinematics, and Effectiveness of Full Face Safety Helmets
- 850248 Photographic Techniques for Accident Reconstruction
- 850249 Velocity Histories as an Accident Reconstruction Tool
- 850250 Computer Aided Automobile Accident Reconstruction-Theory, Graphics, Animation
- 850253 Differences Between EDCRASH and CRASH3
- 850254 The "IMPAC" Computer Program for Accident Reconstruction
- 850256 Accident Research and Accident Reconstruction by the EES-Accident Reconstruction Method
- 850434 Investigation of the Technical Defects Causing Motor Vehicle Accidents
- 850437 Barrier Equivalent Velocity, Delta-v and CRASH3 Stiffness in Automobile Collisions
- 850515 Translations of Tests of Components into Occupant Models and Contact Models
- 851529 Computer Aided Accident Reconstruction of Tractor-Semitrailers
- 851685 Computer Simulation of Automotive Body Crash Response
- 851729 Computer Simulation of Automobile Collision - Reconstruction of Accidents
- 856046 Tire Performance Measurements-Wet and Dry
- 856072 Five Years of New Car Assessment Program - Balance and Current Conclusions
- 856109 General Problems Concerning Car-Pedestrian Collision
- 856111 Computer Simulations of a Range of Car-Pedestrian Collisions
- 856113 Experimental and Mathematical Simulation of Pedestrian-Vehicle and Cyclist-Vehicle Accidents
- 856127 Aspects of Motorcycle Braking

## **1986**

- 860015 Impact of Articulated Vehicles
- 860204 Methodologies and Measuring Devices to Investigate Steering Systems in Crashed

## Cars

- 860206 Cargo Retention in Passenger Cars Under Accident Conditions
- 860207 Photogrammetric Deformation Measurement of Crash Vehicles
- 860209 Crash Phase Accident Reconstruction
- 860210 Reconstruction of Real World Pedestrian Impact
- 860371 Crush Energy in Accident Reconstruction
- 860575 Steady State Cornering on Uneven Roadways
- 860824 Collapse Analysis of Bus Body Structures using Interactive Computer Graphics
- 861416 Photogrammetric Analysis Using the Personal Computer
- 861418 Field Application of Photogrammetric Analysis Techniques: Applications of the FOTOGRAM Program
- 861421 Photogrammetric Mapping of Vehicle Deformations
- 861422 The Application of Photogrammetry to Accident Reconstruction
- 861894 A Revised Damage Analysis Procedure for the CRASH Computer Program

## 1987

- 870040 CRASH 3: Current Status
- 870045 An Overview of the Way EDCRASH Computes Delta-v
- 870046 The "IMPAC" Program for Collision Analysis
- 870047 Applicability of the EES-Accident Reconstruction Method with MacCar©
- 870048 A Review of Impact Models for Vehicle Collision
- 870072 Uses and Limitations of Police Accident Data
- 870236 Drivers' Visual Behavior as Affected by Stopping Maneuver
- 870421 Tyre Modelling for Use in Vehicle Dynamics
- 870425 How to Be an Effective Accident Reconstruction Witness in a Trial
- 870498 Practical Application of Vehicle Speed Determination from Crush Measurements
- 870500 Accident Victim Interaction with Vehicle Interior: Reconstruction Fundamentals
- 870605 A Comprehensive Review of Pedestrian Impact Reconstruction
- 871993 Energy Loss in Vehicle Collisions
- 871995 Computers in Motor Vehicle Accident Reconstruction: A Review

## 1988

- 880061 Effective Courtroom Presentation Techniques for Accident Reconstruction
- 880064 Animated Reconstruction of Automobile Collisions Using SMAC
- 880066 Combining Scene Data with Trajectory Information for Effective Accident Simulation
- 880067 Minimum Guidelines for Efficiently Acquiring or Preserving Basic Information in a Motor Vehicle Accident



- 880069 An Overview of the Way EDSMAC Computes Delta-v
- 880070 Vehicle Data Sources for Accident Reconstruction
- 880072 Measuring Protocol for Quantifying Vehicle Damage from an Energy Basis Point of View
- 880223 Elastic Properties of Selected Vehicles
- 880227 SMAC-87
- 880228 HVOSM-87
- 880656 A Review and Evaluation of Various HIC Algorithms
- 880719 Engineering Models and Animations in Vehicular Accident Studies
- 881725 New Aspects of Pedestrian Protection Loading and Injury Pattern in Simulated Pedestrian Accidents
- 881726 Experimental and Mathematical Car-Bicycle Collision Simulations
- 881767 Vehicle Inertial Parameters-Measured Values and Approximations
- 885076 3-D Crash Analysis Using ADAMS

## **1989**

- 890631 A Primer on Automobile Accident Reconstruction
- 890634 The Vocabulary of Accident Reconstruction
- 890635 A Comparison Study of Skid and Yaw Marks
- 890636 Effects of Change in Angular Velocity of a Vehicle on the Change in Velocity Experienced by an Occupant during a Crash Environment and the Localized Delta-v Concept
- 890638 SAE Tire Braking Traction Survey: A Comparison of Public Highways and Test Surfaces
- 890730 Nighttime Photography - Show It Like It Is
- 890731 Driver Perception Response Time
- 890738 Application and Misapplication of Computer Programs for Accident Reconstruction
- 890740 Further Validation of EDCRASH Using the RICSAC Staged Collisions
- 890746 Cars in Conflict with Larger Vehicles - The Problem of Under-Run
- 890751 Experimental Simulation of Car/Pedestrian and Car/Cyclist Collisions and Application of Findings in Safety Features on the Vehicle
- 890755 Vehicle Occupant Crash Simulation Using Madymo Porsche Airbag 2d
- 890859 Development of a Tumble Number for Use in Accident Reconstruction
- 891254 The Analysis of the Rotational Behavior of Vehicles Using a Full Vehicle Model Simulation

## **1990**

- 900098 CRASH3 Damage Algorithm Reformulation for Front and Rear Collisions
- 900099 Crush Energy Formulations and Single-Event Reconstruction

- 900101 A Comparison Between NHTSA Crash Test Data and CRASH3 Frontal Stiffness Coefficients
- 900102 Further Validation of EDSMAC Using the RICSAC Staged Collisions
- 900103 Tire-Roadway Friction Coefficients on Concrete and Asphalt Surfaces Applicable for Accident Reconstruction
- 900129 Lateral Stiffness, Cornering Stiffness, and Relaxation Length of the Pneumatic Tire
- 900141 Visual Behavior of Novice Drivers as Affected by Traffic Conflicts
- 900144 Driver's Response and Behavior on Being Confronted with a Pedestrian or a Vehicle Suddenly Darting Across the Road
- 900366 Testing and Analysis of Vehicle Rollover Behavior
- 900368 Trajectory Analysis for Collisions Involving Bicycles and Automobiles
- 900369 Vision and Visibility in Vehicular Accident Reconstruction
- 900370 Simple Overhead Photography Techniques for Vehicle Accident Reconstruction
- 900543 Remaining Injury Risk and Force Deflection Characteristics of Vehicles Front in Real World Accidents
- 900745 Collision Dynamics and Injury Causation in Motorcycle Accidents
- 900750 Some Aspects of Motorcycle-Vehicle Collision Reconstruction
- 902331 Application of the Injury Cost Scale (ICS) to Mercedes-Benz Accident Data

## **1991**

- 910119 Stiffness Parameters for Vehicle Collision Analysis
- 910120 Rear Stiffness Coefficients Derived from Barrier Test Data
- 910123 Linear and Rotational Momentum for Computing Impact Speeds in Two-Car Collisions (LARM)
- 910124 A Two-Dimensional Model of a "Falling" Vehicle
- 910125 The Calculation of Motorcycle Speeds from Sliding Distances
- 910126 Heavy Truck Deceleration Rates as a Function of Brake Adjustment
- 910128 Photographic Documentation and Analysis in Vehicle Accident Reconstruction
- 910368 Computer Accident Simulation - Pretty Pictures and the Real World
- 910814 Application of a Pedestrian Impact Model to the Determination of Impact Speed
- 910879 Advances in MADYMO Crash Simulations
- 912916 Considerations for a Neck Injury Criterion
- 916010 Compatibility Problems of Small and Large Passenger Cars in Head on Collisions

## **1992**

- 920390 Energy Absorption and Load Transmission at Vehicle Frontal Collision
- 920480 Automobile Crash Modeling and the Monte Carlo Method
- 920583 The Variation of Static Rollover Metrics With Vehicle Loading and Between Similar Vehicles

- 920584 A Statistical Analysis of Vehicle Rollover Propensity and Vehicle Stability
- 920585 An Investigation, Via Simulation, of Vehicle Characteristics that Contribute to Steering Maneuver Induced Rollover
- 920603 Modelling of Pre- and Post-Impact Phases of Vehicular Collisions
- 920604 Collision Speed Estimation Using a Single Normalised Crush Depth-Impact Speed Characteristic
- 920607 A Method for Quantifying Vehicle Crush Stiffness Coefficients
- 920757 Automated Animation for Human Subjects in the Crash Environment
- 921573 Dynamics of Low Speed Crash Tests with Energy Absorbing Bumper
- 921574 A Physician-Engineer's View of Low Velocity Rearend Collisions
- 921591 Pedestrian Involved Traffic Collision Reconstruction Methodology

## **1993**

- 930100 An Evaluation of Various Viscous Criterion Computational Algorithms
- 930211 Automobile Bumper Behavior in Low-Speed Impacts
- 930653 Post-Impact Spin, 1968-1993
- 930654 Impact Model for Accident Reconstruction - Normal and Tangential Restitution Coefficients
- 930655 Modeling of a Sliding Phase in Accident Reconstruction
- 930656 Reconstruction of Accidents Involving Highway Barriers
- 930657 An Analytical Method to Determine Vehicle Impact Speeds into Energy Absorbing Barrier End Treatments
- 930659 The Physics of Throw Distance in Accident Reconstruction
- 930665 A Comparison of Devices Used to Measure Vehicle Braking Deceleration
- 930740 A Review of Motor Vehicle Glazing-Related Ejection Injuries
- 930889 Analysis of Human Test Subject Kinematic Responses to Low Velocity Rear End Impacts
- 930893 The Influence of Car Crush Behaviour on Frontal Collision Safety and on the Car Size Effect
- 930894 Application of a Generalised Frontal Crush Model of the Car Population to Pole and Narrow Object Impacts
- 930895 Head Impact Reconstruction - HIC Validation and Pedestrian Injury Risk
- 930896 Reconstructing Collisions Involving Ice and Slippery Surfaces
- 930897 Measured Vehicle Inertial Parameters -NHTSA's Data Through September 1992
- 930898 Estimating Crush Stiffness when Reconstructing Vehicle Accidents
- 930899 An Investigation into Vehicle Frontal Impact Stiffness, BEV and Repeated Testing for Reconstruction
- 930903 A Computer Graphics Interface Specification for Studying Humans, Vehicles and Their Environment
- 931842 Vehicle Restitution Response in Low Velocity Collisions

- 932910 The Crash Analysis of a Passenger Vehicle Under Differing Frontal Crash Conditions
- 932913 Kinematic and Dynamic Comparisons of Double A-arm and McPherson Strut Suspension Systems
- 933085 ISOFIX - A New Concept of Installing Child Restraints in Cars
- 933097 The Effect of Pre-Impact Braking on the Performance of Child Restraint Systems in Real Life Accidents and Under Varying Test Conditions
- 933103 Neck Injury Criteria for Children from Real Crash Reconstructions
- 933111 The Relationship Between Delta-v and Injury
- 933126 Deformation Characteristics and Occupant Load Capacity in Lateral Impacts for Nearside Belted Front Car Passengers
- 933129 Computer Simulation of Impact Response of the Human Body in Car-Pedestrian Accidents
- 933133 Motorcycle Crash Test Modelling

## **1994**

- 940532 Human Occupant Kinematic Response to Low Speed Rear-End Impacts
- 940564 Impact Center and Restitution Coefficients for Accident Reconstruction
- 940566 Conservation of Momentum Analysis of Two-Dimensional Colliding Bodies, With or Without Trailers
- 940567 Reference Cases for Comparison of Collision Algorithms Used in Accident Reconstruction
- 940568 Injury Reconstruction: The Biomechanical Analysis of Accidental Injury
- 940719 Use of Monte Carlo Simulation Techniques in Accident Reconstruction
- 940720 Monte Carlo Simulation Methods Applied to Accident Reconstruction and Avoidance Analysis
- 940722 Uncertainty in Accident Reconstruction Calculations
- 940723 Braking and Cornering Effects with and without Anti-Lock Brakes
- 940726 Time-Position-Visibility Analysis: A Graphical Approach
- 940913 A Method for Determining Accident Specific Crush Stiffness Coefficients
- 940914 An Analysis of Trends of Vehicle Frontal Impact Stiffness
- 940915 Delta-v: Basic Concepts, Computational Methods, and Misunderstandings
- 940916 Characteristics of Specific Automobile Bumpers in Low-Velocity Impacts
- 940921 Animation of Perfectly Plastic Vehicle Crush
- 940924 Reconstruction of Automobile/Pedestrian Accidents Using CATAPULT
- 941053 Qualifications of the Reconstructionist: Differing Points of View
- 941055 Response of Out-of-Position Dummies in Rear Impact
- 942216 The Performance of Active and Passive Driver Restraint Systems in Simulated Frontal Collisions
- 942231 Design and Structure of the Windscreen as Part of Injury Reduction for Car

## Occupants, Pedestrians and Bicyclists

- 942232 Influence of the Fronthood Length for the Safety of Pedestrians in Car Accidents and Demands to the Safety of Small Vehicles

## 1995

- 950131 Using ATB in Collision Reconstruction
- 950135 The Technique of Uncertainty Analysis as Applied to the Momentum Equation for Accident Reconstruction
- 950137 Evaluation of Vehicle Velocity Predictions Using the Critical Speed Formula
- 950139 Deceleration Factors on Off-Road Surfaces Applicable for Accident Reconstruction
- 950203 Collision Parameters from Real-Life Car/Motor Cycle Accidents A Basis for Future Standards
- 950306 Analysis of Simple Rollover Metrics
- 950309 The Design of a Vehicle Inertia Measurement Facility
- 950351 The Use of a High Resolution Accident Data Recorder in the Field
- 950358 Impact Analysis Based Upon the CRASH3 Damage Algorithm
- 950360 Applications of NHTSA's Vehicle Parameter Database
- 950651 Lumped-Parameter Modeling of Frontal Offset Impacts
- 950658 Biomechanical Aspects of Cervical Spine Injuries
- 950659 An Overview of the HVE Human Model
- 950865 Regulatory History of Automatic Crash Protection in FMVSS 208
- 950969 Braking Behaviour in Emergencies
- 951067 A Crash Simulation of Instrument Panel Knee Bolster Using Hybrid III Dummy Lower Torso
- 951895 Analysis of Lane Change Crash Avoidance
- 952193 Accident Analysis with Commercial Vehicles and its Contribution to the Development of Vehicle Safety
- 952721 Human volunteer head-neck response in frontal flexion: a new analysis
- 952724 Human head and neck kinematics after low velocity rear end impacts - understanding "Whiplash"
- 952732 Partner Protection in Car to Car Side Impacts Involving Off-Road Vehicles

## 1996

- 960093 Delta-v Thresholds for Cervical Spine Injury
- 960228 A Novel Method for Distance and Relative Velocity Measurement in Rear-End Collision Warning System
- 960441 The Effect of Vehicle Mass in Car-to-Car Collisions
- 960458 Crash Causation: A Case Study of Fatal Accident Circumstances and Configurations

- 960459 Fatal Crashes of Female Drivers Wearing Safety Belts
- 960647 A Primer on the Reconstruction and Presentation of Rollover Accidents
- 960649 The Effect of Vehicle Rotation on the Occupants' Delta-v
- 960654 Analysis of Accidents Involving Alleged Road Surface Defects (i.e., Shoulder Drop-offs, Loose Gravel, Bumps and Potholes)
- 960657 Tire-Road Friction in Winter Conditions for Accident Reconstruction
- 960885 Validation of PC-Crash - A Momentum-Based Accident Reconstruction Program
- 960886 The Collision and Trajectory Models of PC-CRASH
- 960887 Using Barrier Impact Data to Determine Speed Change in Aligned, Low-Speed, Vehicle-to-Vehicle Collisions
- 960890 Three-Dimensional Reconstruction and Simulation of Motor Vehicle Accidents
- 960891 Validation of Several Reconstruction and Simulation Models in the HVE Scientific Visualization Environment
- 960893 Band Information Reconstruction from a Single Photo - A Superimposed Method
- 960894 Accident Investigation and Reconstruction Mapping with Aerial Photography
- 960896 Overview of an HVE Vehicle Database
- 960899 Analysis and Calculation of Delta-v from Crash Test Data
- 961017 Measurement of Motorcycle Slide Coefficients
- 961049 Digital Rectification of Reconstruction Photographs
- 962324 Considerations Concerning Vehicle Collisions Through Simplified Calculations of the Impact Forces
- 962374 The Effect of Structural Stiffness on Occupant Response for a -Gx Acceleration Impact
- 962421 Age Effects on Thoracic Injury Tolerance
- 962425 Biomechanics of Lower Limb Injuries of Belted Car Drivers and the Influence of Intrusion and Accident Severity
- 962429 An Analysis of Injury Mechanisms for Ankle/Foot Region in Frontal Offset Collisions
- 962430 A Global and a Detailed Mathematical Model for Head-Neck Dynamics
- 962434 Effect of Seat Stiffness in Out-of-Position Occupant Response in Rear-End Collisions
- 962439 Performance of Child Restraint Systems in Real-Life Lateral Collisions

## **1997**

- 970942 Developing a Crush Profile Estimate by Balancing Impact Forces
- 970943 Modelling of Car Dynamic Frontal Crush
- 970944 Accident Scene Diagramming Using New Photogrammetric Technique
- 970945 Energy Supply and Time Dependence on Filament Deformation
- 970946 Passenger Vehicle Braking Performance with a Disabled Vacuum Power Booster
- 970947 SMAC-97 Refinement of the Collision Algorithm
- 970949 CRASH-97 Refinement of the Trajectory Solution Procedure

- 970951 A comparison of moment of inertia estimation techniques for vehicle dynamics simulation
- 970952 An Evaluation of Rectified Bitmap 2D Photogrammetry with PC-Rect
- 970954 Drag and Steering Effects of Under Inflated and Deflated Tires
- 970955 Project Y.A.M. (Yaw Analysis Methodology) Vehicle Testing and Findings - Victoria Police, Accident Investigation Section
- 970956 Determination of Bumper Characteristics Using Prototype Moving Barriers
- 970957 An Analytical Assessment of the Critical Speed Formula
- 970958 Validation of the EDVSM 3-Dimensional Vehicle Simulator
- 970960 Effects of Restitution in the Application of Crush Coefficients
- 970961 RICSAC-97 A Reevaluation of the Reference Set of full Scale Crash Tests
- 970962 Avoiding the Emerging Pedestrian: a Mathematical Model
- 970963 Motorcycle Slide to Stop Tests
- 970966 Heavy Truck Wheel Load Distributions on the Highway
- 970967 Using ATB Under the HVE Environment
- 971108 Validation of Newtonian Reconstruction (CRASHEX) Against Simulations of RICSAC Staged Collisions
- 971147 Formulas for Estimating Vehicle Critical Speed From Yaw Marks - A Review
- 971148 Vehicle Critical Speed Formula - Values for the Coefficient of Friction - A Review
- 973282 The Compatibility of Tractor/Trailer-Combinations During Braking Maneuvers
- 973284 Vehicle Dynamics Control for Commercial Vehicle

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- 980018 Documenting Scientific Visualizations and Computer Animations Used in Collision Reconstruction Presentations
- 980019 Using Imported Objects And Images in HVE
- 980021 Modeling of Vehicle Rollover and Evaluation of Occupant Injury Potential Using MADYMO
- 980022 Characteristics of Soil-Tripped Rollovers
- 980023 Speed Change Determination in Low Speed Impacts - A Comparison of Techniques
- 980024 A Method for Determining Crush Stiffness Coefficients from Offset Frontal and Side Crash Tests
- 980025 Crush Energy and Planar Impact Mechanics for Accident Reconstruction
- 980026 System-Based Energy and Momentum Analysis of Collisions
- 980027 Comparison of Modelled and Actual Car Dynamic Frontal Crush
- 980028 Door Latch Strength in a Car Body Environment
- 980029 Crush Stiffness Coefficients, Restitution Constants, and a Revision of CRASH3 & SMAC
- 980367 Comparison of Tire Friction Test Methodologies Used in Accident Reconstruction
- 980368 The Measured Rolling Resistance of Vehicles for Accident Reconstruction

- 980369 Vehicle Braking on Steep Down Grades: Field Experiment Results
- 980371 Brake Fluid Vaporization as a Contributing Factor in Motor Vehicle Collisions
- 980372 The Trailer Simulation Model of PC-Crash
- 980373 Automatic Optimization of Pre-Impact Parameters Using Post Impact Trajectories and Rest Positions
- 980374 Protocol for the Examination of School Bus Vehicles to Support Accident Investigation and Reconstruction
- 980375 Sensitivity of Accident Reconstruction Calculations
- 980377 Using Three-Dimensional Digitization to Model a Vehicle
- 980552 Estimating the Coefficient of Restitution of Vehicle-to-Vehicle Bumper Impacts
- 982747 Effectiveness of the Slip Circle, "COMBINATOR", Model for Combined Tire Cornering and Braking Forces When Applied to a Range of Tires

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- 1999-01-0078 Equations for Speed, Time and Distance for Vehicles Under Maximum Acceleration
- 1999-01-0092 Low Speed Acceleration of the Freightliner FLD-120 Tractor Truck
- 1999-01-0093 Using Computer Reverse Projection Photogrammetry to Analyze an Animation
- 1999-01-0094 Practical Analysis Technique for Quantifying Sideswipe Collisions
- 1999-01-0095 Consideration of the Elastic Compressive Properties of Cars in Frontal Impact
- 1999-01-0096 Comparison Testing of Bumper Isolators
- 1999-01-0097 Determination and Mechanisms of Motor Vehicle Structural Restitution from Crash Test Data
- 1999-01-0098 Characteristic Vehicular Deceleration for Known Hazards
- 1999-01-0099 Crush Energy and Structural Characterization
- 1999-01-0100 Vehicle crash severity assessment in lateral pole impacts
- 1999-01-0101 Computer-Generated Trial Exhibits: A Post-Daubert Update
- 1999-01-0102 An Overview of the EDSMAC4 Collision Simulation Model
- 1999-01-0103 Differences Between EDVDS and Phase 4
- 1999-01-0104 The DyMesh Method for Three-Dimensional Multi-Vehicle Collision Simulation
- 1999-01-0105 A Comparison of Crush Stiffness Characteristics from Partial-Overlap and Full-Overlap Frontal Crash Tests
- 1999-01-0106 Principles of Crush Energy Determination
- 1999-01-0439 Using Digital Photogrammetry to Determine Vehicle Crush and Equivalent Barrier Speed (EBS)
- 1999-01-0440 Acceleration and Speeds of Young Pedestrians
- 1999-01-0441 Seat Belt Survey: Identification and Assessment of Noncollision Markings



- 1999-01-0442 Vehicle and Occupant Response in Low Speed Car to Barrier Override Impacts
- 1999-01-0443 Maximum Head Displacement of Vehicle Occupants Restrained by Lap and Torso Seat Belts in Frontal Impacts
- 1999-01-0444 A New Approach to Occupant Simulation Through the Coupling of PC-Crash and MADYMO
- 1999-01-0445 The Pedestrian Model in PC-Crash - The Introduction of a Multi Body System and its Validation
- 1999-01-0446 Anatomy of Accidents Following Tire Disablements
- 1999-01-0447 Drag and Steering Effects from Tire Tread Belt Separation and Loss
- 1999-01-0448 New Dimensions in Rollover Analysis
- 1999-01-0449 Influence of Passenger and Cargo Load on the At Limit Handling of a Mini Van
- 1999-01-0451 Factors Affecting the Accuracy of Non-Metric Analytical 3-D Photogrammetry, Using PhotoModeler
- 1999-01-0633 US and UK Belted Driver Injuries with and without Airbag Deployments - A Field Data Analysis
- 1999-01-0764 Deployment of Air Bags into the Thorax of an Out-of-Position Dummy
- 1999-01-0785 A Unified Semi-Empirical Tire Model with Higher Accuracy and Less Parameters
- 1999-01-1071 Energy and Entropy in Airbag Deployment: The Effect on an Out-Of-Position Occupant
- 1999-01-1295 The Appropriate Use of "Delta-V" in Describing Accident Severity
- 1999-01-1336 Measured Vehicle Inertial Parameters - NHTSA's Data Through November 1998

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- 2000-01-0357 Modeling Combined Braking and Steering Tire Forces
- 2000-01-0460 The Effect of Crash Pulse Shape on Occupant Simulations
- 2000-01-0461 Structural Rebound Characteristics of the Car Population in Frontal Impacts
- 2000-01-0462 Introduction of the Barrier Equivalent Time (BET) Methodology in the Analysis of Delta-v
- 2000-01-0463 Speed Determination in Car-Truck Sideswipe Collisions
- 2000-01-0464 An Analysis of a Staged Two-Vehicle Impact
- 2000-01-0466 Utilizing Electronic Control Module Data in Accident Reconstruction
- 2000-01-0468 HVE EDSMAC4 Trailer Model Simulation Comparison with Crash Test Data
- 2000-01-0469 Simulations of Large School Bus Crashes
- 2000-01-0470 Low-Speed Acceleration of a Kenworth T2000 Tractor-Truck with Autoshift Transmission
- 2000-01-0471 Validation of the Coupled PC-CRASH - MADYMO Occupant Simulation Model

- 2000-01-0844 Validation of DyMESH for Vehicle vs Barrier Collisions
- 2000-01-0845 Acceleration and Speeds of Young Pedestrians: Phase II
- 2000-01-0846 Comprehensive Analysis Method for Vehicle/Pedestrian Collisions
- 2000-01-0847 Validation of the PC-Crash Pedestrian Model
- 2000-01-0848 SMASH - Program for Car Accident Simulation
- 2000-01-0849 Data from Five Staged Car to Car Collisions and Comparison with Simulations
- 2001-01-0850 Vehicle impact response analysis through the use of accelerometer data
- 2000-01-0851 Techniques for the Reconstruction of Rollover Accidents Involving Sport Utility Vehicles, Light Trucks and Minivans
- 2000-01-0852 Applications and Limitations of 3-Dimensional Vehicle Rollover Simulation
- 2000-01-0854 Modeling of Occupant Impacts During Rollover Collisions
- 2000-01-1313 The Simulation of Driver Inputs Using a Vehicle Driver Model
- 2000-01-1314 Tire Friction During Locked Wheel Braking
- 2000-01-1315 Partially-Braked Impact and Trajectory Benchmarks, and Their Application to CRASH3 and CRASHEX
- 2000-01-1316 Drag and Steering Effects From Disablements of Run Flat Tires
- 2000-01-1317 Characteristics of Seat Belt Restraint System Markings
- 2000-01-1318 Derivation of Closing Speed as a Function of Dissipated Energy
- 2000-01-1435 Road Traffic Accident Reconstruction: Vision, Alertness and Reaction Relating to Driving
- 2000-01-3552 Formula One Accident Investigations

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- 2001-01-0475 Test Method for Simulating Vehicle Rollover
- 2001-01-0499  $\Delta V$ , BEV and Coefficient of Restitution Relationships as Applied to the Interpretation of Vehicle Crash Test Data
- 2001-01-0500 Stiffness and Crush Energy Analysis for Vehicle Collision and Its Relationship to Barrier Equivalent Velocity (BEV)
- 2001-01-0501 Determination of  $b_1$  Coefficients From Lower and Higher Speed Impacts Using Peak Force
- 2001-01-0502 Stiffness Parameters for Vehicle Collision Analysis, An Update
- 2001-01-0503 SIMON: a New Vehicle Simulation Model for Vehicle Design and Safety Research
- 2001-01-0504 Non-Linear Damage Analysis in Accident Reconstruction
- 2001-01-0505 PC-Crash and HVE, an Overview of Similarities and Differences
- 2001-01-0507 Reconstruction of Twenty Staged Collisions With PC-Crashes Optimizer
- 2001-01-0891 Coefficients of Restitution for Low and Moderate Speed Impacts With Non-Standard Impact Configurations
- 2001-01-0892 Dependence of a Coefficient of Restitution on Geometry for High Speed

## Vehicle Collisions

- 2001-01-0893 Low-Speed Impact Testing of Pickup Truck Bumpers
- 2001-01-0896 Pedestrian Behavior At Signal-Controlled Crosswalks
- 2001-01-0897 Real-World Walking Speeds of Young Pedestrians
- 2001-01-0898 Throw Model for Frontal Pedestrian Collisions
- 2001-01-0899 Human Occupant Motion in Rear-End Impacts: Effects of Incremental Increases in Velocity Change
- 2001-01-0900 Vehicle and Occupant Response in Heavy Truck to Passenger Car Sideswipe Impacts
- 2001-01-1281 Relationships Between Pre-Skidding and Pre-Braking Speed
- 2001-01-1282 Light Bulb Filament Analysis – Understanding the Effect of Inertial Impact Forces
- 2001-01-1283 Reconstruction of Accident Severity in a Multiple Vehicle Collision
- 2001-01-1284 Physical Evidence Analysis and Roll Velocity Effects in Rollover Accident Reconstruction
- 2001-01-3165 Essential Considerations in Delta-V Determination

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- 2002-01-0019 Pedestrian Throw Kinematics in Forward Projection Collisions
- 2002-01-0535 Using Event Data Recorders in Collision Reconstruction
- 2002-01-0538 The Effects of Occupant and Vehicular Parameters on the Onset and Severity of Whiplash Associated Disorder from Low Speed Rear-End Collisions
- 2002-01-0540 Low Speed Collinear Impact Severity: A Comparison Between Full Scale Testing and Analytical Prediction Tools with Restitution Analysis
- 2002-01-0542 Identification and Interpretation of Directional Indicators in Contact-Damaged Paint Films - Applications in Motor Vehicle Accident Reconstruction
- 2002-01-0546 Evaluating the Uncertainty in Various Measurement Tasks Common to Accident Reconstruction
- 2002-01-0548 Accelerations and Shock Load Characteristics of Tail Lamps From Full-Scale Automotive Rear Impact Collisions
- 2002-01-0549 Possible Errors Occurring During Accident Reconstruction Based on Car “Black Box” Records
- 2002-01-0550 Revision and Validation of Vehicle/Pedestrian Collision Analysis Method
- 2002-01-0551 Seventeen Motorcycle Crash Tests into Vehicles and a Barrier
- 2002-01-0553 Single Vehicle Wet Road Loss of Control; Effects of Tire Tread Depth and Placement
- 2002-01-0554 Large School Bus Side Impact Stiffness Factors
- 2002-01-0556 Crush Energy Considerations in Override/Underride Impacts
- 2002-01-0557 Curb Impacts - A Continuing Study In Energy Loss and Occupant Kinematics
- 2002-01-0558 The Use of Single Moving Vehicle Testing to Duplicate the Dynamic Vehicle Response From Impacts Between Two Moving Vehicles

- 2002-01-0559 A Simulation Model for Vehicle Braking Systems Fitted with ABS
- 2002-01-0560 A Demographic Analysis and Reconstruction of Selected Cases from the Pedestrian Crash Data Study
- 2002-01-0679 The Accuracy and Sensitivity of Event Data Recorders in Low-Speed Collisions
- 2002-01-0817 Lane Change Maneuver Modeling for Accident Reconstruction Applications
- 2002-01-1305 Re-Analysis of the RICSAC Car Crash Accelerometer Data
- 2002-01-1566 Overview of CARAT-4, a Multi-body Simulation and Collision Modeling Program

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- 2003-01-0159 Vehicle Acceleration and Compartment Intrusion for Far-Sided Occupants v. Near-Sided Occupants in Frontal Offset Collisions
- 2003-01-0486 The Automatic Iteration of SMAC
- 2003-01-0487 Conducting Monte Carlo Analysis with Spreadsheet Programs
- 2003-01-0488 Application of the Monte Carlo Methods for Stability Analysis within the Accident Reconstruction Software PC-CRASH
- 2003-01-0489 Evaluating Uncertainty in Accident Reconstruction with Finite Differences
- 2003-01-0491 Modeling of Low-Speed, Front-to-Rear Vehicle Impacts
- 2003-01-0492 Practical Analysis Methodology for Low Speed Vehicle Collisions Involving Vehicles with Modern Bumper Systems
- 2003-01-0495 Side Impact Motor Vehicle Structural Characteristics From Crash Tests
- 2003-01-0505 An Impact Pulse-Restraint Energy Relationship and Its Applications
- 2003-01-0883 Theoretical vs. Empirical Solutions for Vehicle/Pedestrian Collisions
- 2003-01-0884 Head, Hip and Knee Velocities of Restrained Occupants in Frontal Impacts
- 2003-01-0885 Development and Evaluation of Driver Response Time Predictors Based upon Meta Analysis
- 2003-01-0887 The Analysis and Determination of Tire-Roadway Frictional Drag
- 2003-01-0888 A Study of Errors in Yaw-Based Speed Estimates Due to Effective Braking
- 2003-01-0889 The Accuracy of Pre-Crash Speed Captured by Event Data Recorders
- 2003-01-0890 Effects of Mass and Stiffness Ratio Variation on Vehicle Speed Change and Closing Speed Calculations
- 2003-01-0891 Optical Coordinate Measuring Techniques for the Determination and Visualization of 3D Displacements in Crash Investigations
- 2003-01-0892 Bulb Usage Analysis of LED-Type Automotive Lighting
- 2003-01-0966 Estimation of Passenger Vehicle Inertial Properties and Their Effect on Stability and Handling
- 2003-01-3393 Numerical Methods for Evaluating ECM Data in Accident Reconstruction and Vehicle Dynamics

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- 2004-01-0171 Modeling Driver Response to Lead Vehicle Decelerating
- 2004-01-0330 Crash Simulations to Understand Injury Mechanisms in Maneuver Induced Rollover Crashes
- 2004-01-1168 Vehicle Mass and Stiffness: Search for a Relationship
- 2004-01-1180 Development of an Event Data Recorder and Reconstruction Analysis
- 2004-01-1181 An Examination of the CRASH3 Effective Mass Concept
- 2004-01-1185 Analytical Model for Investigating Low-Speed Sideswipe Collisions
- 2004-01-1186 Enhanced Vehicle Identification in Motor Vehicle Accident Databases
- 2004-01-1187 Yaw Testing of an Instrumented Vehicle with and without Braking
- 2004-01-1191 A Fuzzy System to Determine the Vehicle Yaw Angle
- 2004-01-1193 Vehicle Dynamics in Non-Collinear Low-Velocity, Rear End Collisions
- 2004-01-1194 Crash Severity: A Comparison of Event Data Recorder Measurements with Accident Reconstruction Estimates
- 2004-01-1195 The Efficacy of Event Data Recorders in Pedestrian-Related Accidents
- 2004-01-1198 Occupant Displacement Model for Restrained Adults in Vehicle Frontal Impacts
- 2004-01-1207 Validation of the SIMON Model for Vehicle Handling an Collision Simulation – Comparison of Results with Experiments and Other Models
- 2004-01-1208 Determination and Verification of Equivalent Barrier Speeds (EBS) Using PhotoModeler as a Measurement Tool
- 2004-01-1210 Vehicle Characterization Through Pole Impact Testing, Part I: Vehicle Response in Terms of Acceleration Pulses
- 2004-01-1216 Use of Throw Distances of Pedestrians and Bicyclists as Part of a Scientific Accident Reconstruction Method
- 2004-01-1218 Forensic Evidence of Child Restraint Devices in Vehicle Crashes
- 2004-01-1220 The Effects of Measurement Uncertainty on the Reconstruction of Various Vehicular Collisions
- 2004-01-1221 A Video Tracking Photogrammetry Technique to Survey Roadways for Accident Reconstruction
- 2004-01-1222 Determining the Relative Likelihoods of Competing Scenarios of Events Leading to an Accident

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- 2005-01-0426 Factors that Influence Drivers' Response Choice Decisions in Video Recorded Crashes
- 2005-01-0427 Relationship Between Relative Velocity Detection and Driver Response Times in Vehicle Following Situations

- 2005-01-1175 Vehicle Speed Changes and Accelerations Associated with Curb Impacts and a Comparison to HVE SIMON
- 2005-01-1177 The Application and Reliability of Commercial Vehicle Event Data Recorders for Accident Investigation and Analysis
- 2005-01-1183 Introduction of Pulse Shapes and Durations into Impulse-Momentum Collision Models
- 2005-01-1185 Tachograph Chart - Analysis of Intensive Braking Recording
- 2005-01-1187 Delta-v, Barrier Equivalent Velocity and Acceleration Pulse of a Vehicle During an Impact
- 2005-01-1188 Application of Force Balance Method in Accident Reconstruction
- 2005-01-1189 Validation of the Circular Trajectory Assumption in Critical Speed
- 2005-01-1193 Analysis of Axle Shaft Failures for Use in Crash Reconstruction
- 2005-01-1195 Uncertainty Study of Road Accident Reconstruction - Computational Methods
- 2005-01-1200 Crush and Conservation of Energy Analysis: Toward a Consistent Methodology
- 2005-01-1202 Override/Underride Crush Energy: Results from Vertically Offset Barrier Impacts
- 2005-01-1203 A Parametric Study of Frictional Resistance to Vehicular Rotation Resulting from a Motor Vehicle Impact
- 2005-01-1204 The Effects of Seated Position on Occupant Kinematics in Low-speed Rear-end Impacts
- 2005-01-1205 The Effect of Residual Damage Interpolation Mesh Fineness on Calculated Side Impact Stiffness Coefficients
- 2005-01-1206 The Accuracy of Crash Data from Ford Restraint Control Modules Interpreted with Revised Vetronix Software
- 2005-01-1422 Post-Collision Vehicle Fires - Causes and Room for Improvement
- 2005-01-3141 Challenging the Critical Speed Formula In Light Of the Daubert Decision
- 2005-01-4063 Optimization Techniques Applied to the Problem of Ground Vehicles Accidents Reconstruction

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- 2006-01-0560 Friction Coefficient on Snowy and Icy Surfaces of Pneumatic Tires Fitted with or without Anti-Skid Devices (see also Impact Vol 16-3)
- 2006-01-0899 Accident Reconstruction for Rear Pole Impacts of Passenger Cars
- 2006-01-0900 Automotive Restraint Loading Evidence for Moderate Speed Impacts and a Variety of Restraint Conditions
- 2006-01-0901 A Potential New Approach for the Evaluation of Occupant Response in Frontal Impact Scenarios
- 2006-01-0904 Case Study of Clothing Fabric Transfer to Seat Belt Webbing Under Accident Forces

- 2006-01-0905 Tests Documenting Vehicle Handling with a Temporary-Use Rear Tire and a Run-Flat Rear Tire
- 2006-01-0906 Validation of Loading Marks on Child Safety Seats through Testing
- 2006-01-0907 Determination of Vehicle Velocities and Collision Location by Means of Monte Carlo Simulation Method; siehe auch EVU 2007#Monte-Carlo-Methode in der Unfallrekonstruktion
- 2006-01-0908 Restitution Modeling for Crush Analysis: Theory and Validation
- 2006-01-1128 Forensic Determination of Seat Belt Usage in Automotive Collisions: Development of a Diagnostic Tool
- 2006-01-1129 Commercial Vehicle Event Data Recorders and the Effect of ABS Brakes During Maximum Brake Application
- 2006-01-1395 Lateral Structural Deformation in Frontal Impacts
- 2006-01-1396 The Effect of Stiffness Coefficients on Output Variables in EDSMAC4 Simulations
- 2006-01-1397 The Timing of Pre-Crash Data Recorded in General Motors Sensing and Diagnostic Modules
- 2006-01-1398 Comparison of Drag-Sled and Skidding-Vehicle Drag Factors on Dry Roadways
- 2006-01-1399 Extracting Tire Modal Parameters from Test Data
- 2006-01-1558 Analyzing The Trip-Phase of Soft-Soil Rollovers
- 2006-01-1559 Force and Moment Characteristics of Two Space-Saver Tires
- 2006-01-1560 Realistic Rear Axle Hydroplaning during Forward Motion
- 2006-01-1561 Behavior of a Motorcycle after an Encounter with a Road Irregularity Parallel to its Direction of Travel
- 2006-01-1562 Technical Parameters for Determination of Impact Speed for Motorcycle Accidents and the Importance of Relative Speed on Injury Severity
- 2006-01-1563 Quantifying the Change in Ride Height Due to Braking: Brake Dive Test Data
- 2006-01-1590 Advanced Crash Discrimination using Crash Impact Sound Sensing (CISS)
- 2006-01-1676 Quantifying the Effects of Surface Debris on Vehicle Deceleration Rate and Anti-lock Brake Systems
- 2006-01-3556 Comparison of Established Heavy Brake Heating/Cooling Models with HVE Brake Designer® in a Real Mountain Accident
- 2006-01-3557 Usable Models for Free and Forced Cooling of Commercial Vehicle Drum Brakes

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- 2007-01-0714 Calculation of Deceleration Rates for S-Cam Air-Braked Heavy Trucks Equipped with Anti-Lock Brake Systems

- 2007-01-0715 Uncertainty Analysis of the Preimpact Phase of a Pedestrian Collision
- 2007-01-0718 Digital Camera Calibration for Luminance Estimation in Nighttime Visibility Studies
- 2007-01-0719 Forensic Seat Belt Evidence as an Indicator of Impact Angle
- 2007-01-0722 Daily Vehicle Inspection and Vehicle Maintenance Issues in Accident Reconstruction
- 2007-01-0723 Relationship Between Anti-Lock Tire Mark Length and Speed Change
- 2007-01-0724 Pulse Shape and Duration in Frontal Crashes
- 2007-01-0728 Bumper Paint Damage in Low Speed Impacts
- 2007-01-0729 Accident Reconstruction Based on EDR Records - Simulation and Experimental Study
- 2007-01-0730 Quantifying the Uncertainty in the Coefficient of Restitution Obtained with Accelerometer Data from a Crash Test
- 2007-01-0731 Estimation of Frontal Crush Stiffness Coefficients for Car-to-Heavy Truck Underride Collisions
- 2007-01-0732 Vehicle Linear and Rotational Acceleration, Velocity and Displacement during Staged Rollover Collisions
- 2007-01-0733 Vehicle Response Comparison to Tire Tread Separations Induced by Circumferentially Cut and Distressed Tires
- 2007-01-0734 Analysis of Tapered Roller Bearing Type Hub Separations in Motor Vehicle Crashes
- 2007-01-0735 Analysis of Collisions Involving Articulated Vehicles
- 2007-01-0736 Pavement Friction Reduction Due to Fine-Grained Earth Contaminants
- 2007-01-0737 Residual Crush Energy Partitioning, Normal and Tangential Energy Losses
- 2007-01-0741 Considerations for Applying and Interpreting Monte Carlo Simulation Analyses in Accident Reconstruction
- 2007-01-0742 Trajectory Model of Occupants Ejected in Rollover Crashes
- 2007-01-0744 On the Concept of Inter-Vehicle Friction and Its Application in Automobile Accident Reconstruction
- 2007-01-0816 Analytical Tire Forces and Moments Model With Validated Data

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- 2008-01-0155 Characteristics of Trailer Rear Impact Guard - Interdependence of Guard Strength, Energy Absorption, Occupant Acceleration Forces and Passenger Compartment Intrusion
- 2008-01-0158 Vehicle Speed Change and Acceleration Associated with Curb Impacts and a Comparison to Computer Simulation with a Multi-Point Radial Spring Tire Model
- 2008-01-0160 Comparison of Collision and Noncollision Marks on Vehicle Restraint Systems
- 2008-01-0163 A Three-Dimensional Crush Measurement Methodology using Two-Dimensional Photographs



- 2008-01-0164 Motorcycle Rider Trajectory in Pitch-Over Brake Applications and Impacts
- 2008-01-0167 Glass Debris in Rollover Accidents
- 2008-01-0168 Crash Pulse and DeltaV Comparisons in a Series of Crash Tests with Similar Damage (BEV, EES)
- 2008-01-0169 Predicting Low-Speed Collision Descriptors using Dissimilar Collision Data
- 2008-01-0170 Pole and Vehicle Energy Absorption in Lateral Oblique Impacts with Rigid and Frangible Poles
- 2008-01-0171 Vehicle Handling and Control Following Front Ball Joint Failure
- 2008-01-0172 Rollover Dynamics: An Exploration of the Fundamentals
- 2008-01-0173 Roadway Asphalt Damage Force Analysis for Accident Reconstruction
- 2008-01-0174 Derivation of Vehicle-to-Vehicle Frontal Crash Pulse Estimates from Barrier Crash Data
- 2008-01-0175 Crash Pulse Modeling of Force Limiting Structures
- 2008-01-0177 Analysis of Tie Rod Separations in Motor Vehicle Crashes
- 2008-01-0178 Analysis of Vehicle-to-Ground Impacts During a Rollover with an Impulse-Momentum Impact Model
- 2008-01-0179 Modeling of Truck-Car Sideswipe Collisions Using Lug Patterns
- 2008-01-0180 Comparisons of Devices for Measuring Acceleration vs. Time in Braking Tests
- 2008-01-0183 Crash Pulse Scaling Applied to Accident Reconstruction
- 2008-01-0517 Occupant Trajectory Model using Case-Specific Accident Reconstruction Data for Vehicle Position, Roll, and Yaw
- 2008-01-0524 A Study of a Method for Predicting the Risk of Crossing-Collisions at Intersection
- 2008-36-0096 Ground Vehicles Accident Reconstruction using a Procedure based on Genetic Algorithms

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- 2009-01-0056 Motion Tracking in Crash Test Applications with Inertial Measurement Units
- 2009-01-0092 Determining Vehicle Steering and Braking from Yaw Mark Striations
- 2009-01-0093 Development of a Variable Deceleration Rate Approach to Rollover Crash Reconstruction
- 2009-01-0099 The Influence of Disablement of Various Brakes on the Dry Stopping Performance and Stability of a Tractor-Semitrailer
- 2009-01-0100 Tire Mark Analysis of a Modern Passenger Vehicle with Respect to Tire Variation, Tire Pressure and Chassis Control Systems, siehe auch VKU-Artikel Pkw-Reifenspuren unter Einfluss der Regelsysteme ABS und ESP und der Parameter Reifenart und Reifendruck
- 2009-01-0101 Analysis of Front Suspension Ball Joint Separations in Motor Vehicle Crashes
- 2009-01-0102 Tire Models for Vehicle Dynamic Simulation and Accident Reconstruction (siehe auch EVU 2008)

- 2009-01-0103 Variability of Yaw Calculations from Field Testing
- 2009-01-0104 Monte Carlo Techniques for Correlated Variables in Crash Reconstruction
- 2009-01-0105 Crush Energy Assessment in Frontal Underride/Override Crashes
- 2009-01-0107 Analysis of Left-Turning Vehicles at a 4-way Medium-Sized Signalized Intersection
- 2009-01-0109 Measurement and Modeling of Rollover Airborne Trajectories
- 2009-01-0110 Simulating Headlamp Illumination Using Photometric Light Clusters
- 2009-01-0111 Mechanisms of Wheel Separations
- 2009-01-0383 Measurements of Non-Injurious Head Accelerations of a Pediatric Population
- 2009-01-0436 Effectiveness of Electronic Stability Control on Maintaining Yaw Stability When an SUV Has a Rear Tire Tread Separation.
- 2009-01-0830 Vehicle and Occupant Responses in a Friction Trip Rollover Test
- 2009-01-0879 Comparison of Heavy Truck Engine Control Unit Hard Stop Data with Higher-Resolution On-Vehicle Data
- 2009-01-0881 Data Sources and Analysis of a Heavy Vehicle Event Data Recorder – V-MAC III
- 2009-01-1201 Relationship between Seatback Stiffness/Strength and Risk of Serious/Fatal Injury in Rear-Impact Crashes
- 2009-01-2264 Validation Study of a Generalized Minor Rear Vehicle Crash MADYMO Model Utilizing Real World Data
- 2009-32-0081 Rider Response Time in Motorcycle Riding

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- 2010-01-0046 Observed Errors in Distance Estimation
- 2010-01-0047 Roadway Asphalt Damage Analysis: Dynamic Evaluation of Gouge Forces
- 2010-01-0049 Tractor Semitrailer Left Turns and Lane Changes
- 2010-01-0050 Driver Perception of a Loose Left Rear Wheel
- 2010-01-0053 Road Bicycle Dynamics in the Presence of Idealized Roadway Irregularities
- 2010-01-0054 Motorcycle Tire/Road Friction
- 2010-01-0055 Analysis of Multi-Vehicle Rear-End Accidents
- 2010-01-0056 Post-Impact Examination of HID Headlamps
- 2010-01-0062 Modeling Passenger Vehicle Acceleration Profiles from Naturalistic Observations and Driver Testing at Two-way-stop Controlled Intersections
- 2010-01-0064 Analysis of Bicycle Pitch-Over in a Controlled Environment
- 2010-01-0065 The Accuracy of Photogrammetry vs. Hands-on Measurement Techniques used in Accident Reconstruction
- 2010-01-0066 Braking on Dry Pavement and Gravel With and Without ABS
- 2010-01-0067 Brake Pedal Response and Occupant Kinematics During Low Speed Rear-End Collisions
- 2010-01-0069 Front and Rear Car Crush Coefficients for Energy Calculations

- 2010-01-0070 Verification of ABS Models Applied in Programs for Road Accident Simulation
- 2010-01-0071 Sensitivity of Monte Carlo Modeling in Crash Reconstruction
- 2010-01-0072 Comparison of Motorcycle Braking System Effectiveness
- 2010-01-0227 Trailer Rear Impact Protection: Influence of Guard Support Deformation
- 2010-01-1001 Accuracy of EDR During Rotation on Low Friction Surfaces
- 2010-01-1581 Updating Generic Crush Stiffness Coefficients for Accident Reconstruction

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- 2011-01-0084 Influence of Vehicle Front End Design on Pedestrian Lower Leg Performance for SUV Class Vehicle
- 2011-01-0576 Method for Estimating Time to Collision (TTC) at Braking in Real-World, Lead Vehicle Stopped Rear-End Crashes for Use in Pre-Crash System Design
- 2011-01-1117 Rollover Testing of Recreational Off-Highway Vehicles (ROVs) for Accident Reconstruction
- 2011-01-0280 Heavy Truck Engine Retarders: Testing and Theory
- 2011-01-0282 Lug Nut Trace Analysis to Determine Velocity Ratio
- 2011-01-0289 Closed Form Solution of BEV's and b1 Coefficients from Collinear Vehicle to Vehicle Crash Testing
- 2011-01-0290 A Bayesian Approach to Cross-Validation in Pedestrian Accident Reconstruction
- 2011-01-0541 A Study of Crash Energy and Severity in Frontal Vehicle-To-Vehicle Crash Tests
- 2011-01-0808 Data Extraction Methods and their Effects on the Retention of Event Data Contained in the Electronic Control Modules of Detroit Diesel and Mercedes-Benz Engines
- 2011-01-1093 Evaluation of Dynamic Roof Deformation in Rollover Crash Tests
- 2011-01-1114 Rollover Crash Test Results: Steer-Induced Rollovers
- 2011-22-0011 Response of PMHS to High- and Low-Speed Oblique and Lateral Pneumatic Ram Impacts
- 2011-22-0017 Performance of Collision Damage Mitigation Braking Systems and their Effects on Human Injury in the Event of Car-to-Pedestrian Accidents
- 2011-36-0384 A Computational Study to Determine the Severity of Injuries in the Driver of Passenger Car and Sport Utility Vehicle Due to Rollover Accidents

## **2012**

- 2012-01-0103 Full-Scale Moving Motorcycle into Moving Car Crash Testing for Use in Safety Design and Accident Reconstruction
- 2012-01-0271 Different Factors Influencing Post-crash Pedestrian Kinematics
- 2012-01-0573 Injury Rates for Older and Younger Belted Drivers in Traffic Accidents
- 2012-01-0595 Computational Consideration of Crush Energy Estimation in Frontal

## Collisions with Underride and Lateral Offset

- 2012-01-0599 An Investigation of Injury Factors Concerning Drivers in Vehicles Involved in Small-Overlap Frontal Crashes
- 2012-01-0600 A Critique of Critical Speed Yaw Mark Research
- 2012-01-0604 Sensitivity of Collision Simulation Results to Initial Assumptions
- 2012-01-0616 Rollout Deceleration of Modern Passenger Vehicles
- 2012-01-0617 Benefits and Methodology for Dimensioning a Vehicle Using a 3D Scanner for Accident Reconstruction Purposes
- 2012-01-0999 Accuracy of Event Data in the 2010 and 2011 Toyota Camry During Steady State and Braking Conditions
- 2012-36-0456 Reconstruction Tests Design to Support the Correlation of Real Injuries with Dummy Readings

## 2013

- 2013-01-0752 Light Bulb Filament Distortion Thresholds by Voltage and Delta-V
- 2013-01-0770 Energy Dissipation in High Speed Frontal Collisions
- 2013-01-0771 Commercial Vehicle Skid Distance Testing and Analysis
- 2013-01-0772 Modeling of Pedestrian Midblock Crossing Speed with Respect to Vehicle Gap Acceptance
- 2013-01-0778 Using Data from a DriveCam Event Recorder to Reconstruct a Vehicle-to-Vehicle Impact
- 2013-01-0779 Uncertainty in Calculations Using Lambourn's Critical Speed Procedure
- 2013-01-0780 Four-Point Planar Homography Algorithm for Rectification Photogrammetry: Development and Applications
- 2013-01-0781 Approach to Determine Slip Values Based on the Intensity of Tire Marks with Respect to Tire and Road Properties
- 2013-01-0784 The Accuracy of Photo-Based Three-Dimensional Scanning for Collision Reconstruction Using 123D Catch
- 2013-01-0785 The Accuracy of Pedestrians in Estimating the Speed of a Moving Vehicle
- 2013-01-0787 Determining When an Object Enters the Headlight Beam Pattern of a Vehicle
- 2013-01-0789 Friction, Tread Depth and Water; Laboratory Investigations of Passenger Car Tire Cornering Performance under Minimally-Wet Conditions
- 2013-01-0793 Two-Dimensional Collision Simulations of Low-Speed Crash Tests
- 2013-01-0794 Work-Energy Relationships for the Collinear Single Degree of Freedom Impact Model under the Case of Net Unbalanced Externally Applied Forces
- 2013-01-0796 Stiffness Coefficients of Heavy Commercial Vehicles
- 2013-01-0805 Assessment of Ear- and Tooth-Mounted Accelerometers as Representative of Human Head Response
- 2013-01-1265 Validation of Event Data Recorders in High Severity Full-Frontal Crash Tests

## 2014

- 2014-01-0434 Impacts of Dynamic Rear Lighting on Driver Response
- 2014-01-0442 Analysis of Nighttime Vehicular Collisions and the Application of Human Factors: An Integrated Approach
- 2014-01-0464 Vehicle Acceleration Modeling in PC-Crash
- 2014-01-0466 Lane Change Maneuver Driving a Car with Reduced Tire Pressure
- 2014-01-0467 Sample-Based Estimation of Vehicle Speeds from Yaw Marks: Bayesian Implementation Using Markov Chain Monte Carlo Simulation
- 2014-01-0468 Prediction of Stiffness Coefficients for Frontal Impacts in Passenger Vehicles
- 2014-01-0469 Analysis of High-Speed Sideswipe Collisions Using Data from Small Overlap Tests
- 2014-01-0470 Pedestrian Impact on Low Friction Surface
- 2014-01-0473 Calculating Three Dimensional Stiffness Coefficients for Use in Three Dimensional Simulation Modeling for Accident Reconstruction
- 2014-01-0474 Calculating Non-Linear Frontal Stiffness Coefficients
- 2014-01-0477 Further Assessment of the Uncertainty of CRASH3  $\Delta V$  and Energy Loss Calculations
- 2014-01-0478 Time and Distance Required for a Motorcycle to Turn Away from an Obstacle
- 2014-01-0481 Comparison of Quasistatic Bumper Testing and Dynamic Full Vehicle Testing for Reconstructing Low Speed Collisions
- 2014-01-0483 Video Analysis and Analytical Modeling of Actual Vehicle/Pedestrian Collisions
- 2014-01-0490 Head Accelerations in Out-of-Position Postures in Low Speed Rear Impacts: A Comparison between Volunteer Data and GATB Simulation
- 2014-01-0493 Measurements of Non-Injurious Head Accelerations of Young Children
- 2014-01-0496 Airbag Deployment Thresholds from Analysis of the NASS EDR Database
- 2014-01-0501 The Use of Available Qualcomm Data in Accident Reconstruction and Analysis
- 2014-01-0517 Influences on the Risk of Injury of Bicyclists' Heads and Benefits of Bicycle Helmets in Terms of Injury Avoidance and Reduction of Injury Severity
- 2014-01-0518 Influence of Feature Lines of Vehicle Hood Styling on Headform Kinematics and Injury Evaluation in Car-to-Pedestrian Impact Simulations
- 2014-01-0524 The Effect of Rear Impact Collision Delta-V and Restraint Status on Injury Outcome
- 2014-01-0537 A Comparison of the NHTSA Research Offset Oblique and Small overlap Impact Tests and the IIHS Moderate and Small Overlap Tests
- 2014-01-1989 An Examination of Crash and NASS Data to Evaluate the Field Relevance of IIHS Small Offset Tests

## 2015

- 2015-01-0027 Method for Estimating Vehicle-Specific Frontal Stiffness Values in the Absence of an Applicable Crash Test Using Methodically-Distilled Data from the NHTSA Crash Database (Phase 1)
- 2015-26-0152 Crash Pulse Characterization for Restraints System Performance Optimization
- 2015-26-0162 Accident Analysis of a Two-Lane National Highway in India
- 2015-26-0167 Benefit Estimation of Anti-Lock Braking System for Powered Two Wheeler On Indian Highways
- 2015-26-0172 Behaviour of Car Drivers in Accidents used to Estimate the Benefit of Car Antilock Brake System on Indian Highways
- 2015-26-0241 Comparative Study between the WorldSID and the EuroSID II in Static Impact Tests
- 2015-01-1415 Features of Fatal Cyclist Injuries in Vehicle-Versus-Cyclist Accidents in Japan
- 2015-01-1416 Applying Camera Matching Methods to Laser Scanned Three Dimensional Scene Data with Comparisons to Other Methods
- 2015-01-1418 Pedestrian Throw Distance Impact Speed Contour Plots Using PC-Crash
- 2015-01-1419 Reconstruction of Vehicle-Pedestrian Collisions Including an unknown Point of Impact
- 2015-01-1420 Medium Duty North American Delivery Van Frontal Barrier Crash Test Data for Crash Reconstruction
- 2015-01-1421 On the Directionality of Rollover Damage and Abrasions
- 2015-01-1422 Validation of Equations for Motorcycle and Rider Lean on a Curve
- 2015-01-1430 The Development of a Non-Linear Pressure Model of the FMVSS 214D Moving Deformable Barrier for Use in HVE
- 2015-01-1433 Nonlinear Optimization in Vehicular Crash Reconstruction
- 2015-01-1434 A Comparison of Bayesian Speed Estimates from Rollover and Critical Speed Methods
- 2015-01-1435 Assessment of the Accuracy of Google Earth Satellite Imagery for use as a Tool in Accident Reconstruction
- 2015-01-1437 Field-based Assessments of Various AIS2+ Head Risk Curves for Frontal Impact
- 2015-01-1439 Investigation on an Injury Criterion Related to Traumatic Brain Injury Primarily Induced by Head Rotation
- 2015-01-1442 Precise Dummy Head Trajectories in Crash Tests based on Fusion of Optical and Electrical Data: Influence of Sensor Errors and Initial Values
- 2015-01-1448 EDR Pulse Component Vector Analysis
- 2015-01-1450 Extracting Event Data from Memory Chips within a Detroit Diesel DDEC V
- 2015-01-1451 Injury Sources for Second Row Occupants in Frontal Crashes Considering Age and Restraint Condition Influence
- 2015-01-1461 Pedestrians Wrap Around Distance WAD and the Relevance as Influence Parameter for Head Injuries (dürfte dem VKU-Artikel Abwickellänge WAD des Körpers von

Fußgängern und Radfahrern an der Pkw-Front und Relevanz als Einflussparameter für Kopfverletzungen aus 02/2015 entsprechen)

- 2015-01-1464 Typical Pedestrian Accident Scenarios in China and Crash Severity Mitigation by Autonomous Emergency Braking Systems (AEBS)
- 2015-01-1466 Accident Characteristics and Influence Parameters of Severe Motorcycle Accidents in Germany
- 2015-01-1467 Effect of Vehicle's Front End Profile on Pedestrian's Lower Extremity Injury Pattern in Real World and Verification by Large Male FE Human Model
- 2015-01-1475 Rollover Testing of a Sport Utility Vehicle (SUV) with an Inertial Measurement Unit (IMU)
- 2015-01-1477 Steering Maneuver with Furrow-Tripped Rollovers of a Pickup and Passenger Car
- 2015-01-1492 Influence of Introduction of Oblique Moving Deformable Barrier Test on Collision Compatibility

## **2016**

- 2016-01-0447 Simulation of a sudden tire inflation pressure loss in a full vehicle context for active safety applications
- 2016-01-1450 Evaluation of the effectiveness of Volvo pedestrian detection system based on real-life fatal pedestrian accidents
- 2016-01-1461 Data Acquisition using Smart Phone applications
- 2016-01-1464 Accident Reconstruction using data Retrieval from crash-test Video Images
- 2016-01-1465 The potential use of sensor data from Advanced Driver Assistance Systems (ADAS) in accident reconstruction
- 2016-01-1468 Tire Mark Striations: Sensitivity and Uncertainty Analysis
- 2016-01-1472 The Methodology for Traffic Accident Database on Scenarios TADS as New Approach of In-Depth-Accident-Investigation for Accident Avoidance Strategies
- 2016-01-1473 Implications of Manufacturers Bumper Ratings in Low Speed Collision Analyses
- 2016-01-1475 A Survey of Video and Photo based Photogrammetry Software for Documenting Vehicle Crush
- 2016-01-1476 Validating a Methodology for Calculating Luminance
- 2016-01-1479 The Relationship Between Tire Mark Striations and Tire Forces
- 2016-01-1480 Determination of Critical Speed, Slip Angle and Longitudinal Wheel Slip based on Yaw Marks Left by a Wheel with Zero Tire Pressure
- 2016-01-1482 Validation and Application of Speedometer and Tachometer Readings for Reconstruction of Motorcycle / Scooter Impacts
- 2016-01-1484 Why Simulation? An Interesting Case Study
- 2016-01-1488 Semi-Automated Approach to Real World Motor Vehicle Crash Reconstruction Using a Generic Simplified Vehicle Buck Model
- 2016-01-1489 Regional Level Crash Induced Injury Metrics Implemented within THUMS

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- 2016-01-1495 Event Data Recorder (EDR) Developed by Toyota Motor Corporation
- 2016-01-1511 Prediction of Injury Risk in Pedestrian Accident Scenarios Using Virtual Human Body Model VIRTHUMAN
- 2016-01-1516 Analysis of Occupant Kinematics of Rollover Buck Test
- 2016-01-1529 A Methodology for Prediction of Periprosthetic Injuries in Occupants with TKR Implants in Vehicle Crashes
- 2016-01-1568 Friction on Polished vs. Newly Re-rocked Oil-and-chip Roadway Surfaces

## **2017**

- 2017-01-1411 Bayesian Estimation of Drivers' Gap Selections and Reaction Times in Left-Turning Crashes from Event Data Recorder Pre-Crash Data
- 2017-01-1412 Speedometers and Collision Reconstruction
- 2017-01-1413 Video Analysis of Motorcycle and Rider Dynamics During High-Side Falls
- 2017-01-1419 Real-time Crash Detection and Its Application in Incident Reporting and Accident Reconstruction
- 2017-01-1422 An Evaluation of Two Methodologies for Lens Distortion Removal When EXIF Data is Unavailable
- 2017-01-1423 Rear Override Impact Analysis of Full-Size and Light Duty Pickup Trucks for Crash Reconstruction
- 2017-01-1425 Accuracy of the Momentum Energy Restitution Method for Offset Inline Minor Rear-End Impacts
- 2017-01-1427 Deceleration Rates of Vehicles with Disabled Tires
- 2017-01-1436 An Analysis of EDR Data in Kawasaki Ninja 300 (EX300) Motorcycles
- 2017-01-1462 Reconstruction of Pediatric Occupant Kinematic Responses Using Finite Element Method in a Real-World Lateral Impact

## **2018**

- 2018-01-1037 Motorcycle Headlamp Distribution Comparison
- 2018-01-1044 Ground Landing Mechanisms in Vehicle-To-Pedestrian Impacts Based on Accident Video Records
- 2018-01-1440 Accident Reconstruction with Data Recorded by Electronic Control Units in Vehicles with a Pre-crash Safety System
- 2018-01-1441 The Accuracy of Toyota Vehicle Control History Data during Autonomous Emergency Braking
- 2018-01-1442 Analysis of Berla iVe Acquisitions of Vehicle Speed Data from Ford Sync Systems
- 2018-01-0495 Understanding the Automotive Pedal Usage and Foot Movement Characteristics of Older Drivers
- 2018-01-0509 Methodology for Estimating the Benefits of Lane Departure Warnings using



## Event Data Recorders

- 2018-01-0514 Driver Response Time to Midblock Crossing Pedestrians
- 2018-01-0516 Using Multiple Photographs and USGS LiDAR to Improve Photogrammetric Accuracy
- 2018-01-0522 Correlation of “Non-Zero” Speedometer Readings with EDR Data
- 2018-01-0523 An Analytical Review and Extension of Two Decades of Research Related to PC-Crash Simulation Software
- 2018-01-0527 Introduction to Traffic Signal Data Loggers and their Application to Accident Reconstruction
- 2018-01-0529 Further Validation of Equations for Motorcycle Lean on a Curve
- 2018-01-0531 Driver Response Time to Cyclist Path Intrusions
- 2018-01-0532 Videogrammetry in Vehicle Crash Reconstruction with a Moving Video Camera
- 2018-01-0541 Estimation of Injury Risk of the Cervical Spine of Car Occupants after Emergency Braking

## 2019

- 2019-01-0411 Two Phase Heavy Truck Acceleration Model
- 2019-01-0419 Speeds of Child Cyclists
- 2019-01-0421 Lateral and Tangential Accelerations of Left Turning Vehicles from Naturalistic Observations
- 2019-01-0422 Inter-Vehicular Sliding Friction and Crush Energy Losses in Impulse Momentum Planar Collision
- 2019-01-0423 Reconstruction of 3D Accident Sites Using USGS LiDAR, Aerial Images, and Photogrammetry
- 2019-01-0620 Probability of Frontal Airbag Deployment in Bumper-Bumper and Underride Collisions

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