IRCOBI Conference 2026

Version: 29.08.2026

Overview:

	Wednesday, 9 September 2026	
8:30h	**Welcome Address**	
8:46h	**S1-1: Biomechanics of Alternative Seating**	**S2-1: Helmet Safety**
10:00h	**Break**	
10:30h	**S1-2: Investigations using Human Body Models**	**S2-2: Traumatic Brain Injury**
12:00h	**Lunch**	
13:30h	**Keynote Lecture**	
14:10h	**S1-3: Anthropometric Test Device Performance**	**S2-3: Vulnerable Road Users - Pedestrians**
15:30h	**Break**	
16:00h	**S1-4: Child Safety**	**S2-4: Vehicle Crashworthiness and Seat Design**
18:00h	**Reception**	

	Thursday, 10 September 2026	
8:30h	**S1-5: Virtual Testing**	**S2-5: Sports Injury**
10:00h	**Break**	
10:30h	**S1-6: Novel Experimental Methods**	**S2-6: Developments in Human Body Models**
12:00h	**Lunch**	
13:30h	**Bertil Aldman Memorial Lecture**	
14:10h	**S1-7: Injury Analysis using Human Body Models**	**S2-7: Vulnerable Road Users - Cyclist and PTW**
15:30h	**Break**	
16:00h	**S1-8: Volunteer Testing**	**S2-8: Validation of Human Body Models**
17:30h	**Student-Get-Together**	
19:30h	**Conference Dinner**	

	Friday, 11 September 2026	
8:30h	**S1-9: Crash Data and Analysis I**	**S2-9: Tissue Mechanics**
10:00h	**Break**	
10:30h	**S1-10: Crash Data and Analysis II**	**S2-10: ATD Model Development and Analysis**
12:40h	**Conference Wrap-up & Prizes**	
13:00h	**Take Away Lunch**	

IRCOBI

Wednesday, 9 September 2026

Foyer

08:00 Registration

Room A

08:30 Welcome Address

Spyros Masouros, IRCOBI president

Room A

08:46 S1-1: Biomechanics of Alternative Seating

8:46 IRC-26-10
Automatic Creation of Synthetic Finite Element Seats Using Statistical Models
P G Cemborain; D Hall; J P Donlon; A Mehta; B Gepner; A Caudillo-Huerta; D Perez-Rapela; M Edwards; J Jermakian; J Forman
University of Virginia, Human Injury Consulting and Research LLC, Insurance Institute for Highway Safety (IIHS)

9:02 IRC-26-11
Evaluation of Flesh Material Model Implementation on GHBMC Kinematic Predictions for 50th Percentile Male and Female Occupants in Frontal Impacts in Reclined Postures
R Newman; A Caudillo; J Shin; M B Panzer; B D Gepner
University of Virginia

9:18 IRC-26-12
Short Communication: Assessing SAFER HBM Kinematic Response Sensitivity in Frontal Impacts with Various Reclined Seating Postures
E Jokubaityte; M Valdano; K Mroz; F J Lopez-Valdes
Comillas Pontifical University, Autoliv

9:26 IRC-26-13
Short Communication: External Biofidelity Evaluation of GHBMC M50-O V.6.1 Model in Deep Reclined Position
M Soto; F Auriault; P Baudrit; O Richard; M Debray
CEESAR, Forvia Automotive Seating

9:34 IRC-26-14
Short Communication: Challenges to Position Obese Human Body Models to Reclined Configurations
A Vial; Y Lafon; M Lebarbé; P Petit; P Beillas
Univ Eiffel, CEESAR, LAB PSA Renault

9:42 IRC-26-15
Short Communication: An Integrated Framework for Parametric Shape and Pose Reconfiguration of Finite-Element Human Body Models: Application to Highly Reclined AC-HUMs Occupants
Y Chen; B Zhou; X Feng; K Yang; Y Li; J Ma; J Li; J Tang
Chongqing Changan Automobile Co., Chongqing University

9:50 IRC-26-16
Short Communication: Frontal Impacts on Omnidirectional Seating Orientations of the GHBMC M50-O: Informing New Sled Conditions for ADS
V Pradhan; H Kwon
Transportation Research Center Inc., NHTSA

Room B

S2-1: Helmet Safety

8:46 IRC-26-79
Assessment of an Anti-Rotation Technology effect and Pedelec Bicycle Helmets based on Certimoov methodology
N Bourdet; C Deck; F Meyer; R Willinger
Strasbourg University

9:02 IRC-26-80
Short Communication: A Comparative Study of Injury Risk in Collapsible and Conventional Bicycle Helmets
W Dawber; X Yu; V Darvishi; M Ghajari
Imperial College

9:10 IRC-26-81
Short Communication: Can bicycle helmets mitigate severe head injuries in high-speed e-bike accidents?
Q Huang; C Li; S Kleiven; Z Zhou
KTH Royal Institute of Technology

9:18 IRC-26-82
Short Communication: Assessment of Novel Test Method for Bicycle Helmets.
K Brolin; V Alvarez
Lightness by Design

9:26 IRC-26-83
Short Communication: Using High-Speed Cineradiography to Access Bicycle Helmet Internal Strain During Head Impacts: A Proof of Concept
C Tülemek; N Bailly; R Madke; F Turquier
Aix Marseille University, Univ Gustave Eiffel, LBA

9:34 IRC-26-84
Short Communication: Does a Chin Bar-Mounted Action Camera Increase Head Injury Risk in Facial Impacts?
S Meng; L Low; M Ghajari
Autoliv Research, Imperial College

9:42 IRC-26-85
Short Communication: Facial Impact Conditions for Assessing Motorcycle Helmets, Informed by Reconstruction of Real-World Collisions.
L Low; C Baker; W Dawber; S Meng; M Ghajari
Imperial College, Autoliv

9:50 IRC-26-86
Short Communication: Impact Performance of Equestrian Helmets in Oblique Impacts.
S Bonin; M Fahlstedt; P Singh
MEA Forensic Engineers & Scientists, Mips AB

Room C (coffee also available in rooms D and E)

10:00 Coffee break

Room A

10:30 S1-2: Investigations using Human Body Models

10:30 IRC-26-17
Influence of Positioning-Induced Changes in Pelvic Angle on Occupant Kinematics and Injury Risk in Human Body Models during Frontal Loading
S Fitterer; D Kofler; J Hu; F Ressi; C Shah; C Klug
Graz University of Technology, University of Michigan Transportation Research Institute (UMTRI), Humanetics

10:46 IRC-26-18
Confidence-based Design Optimisation of Belt Limiting Force Using Gaussian Process Model Prediction of Rib Fracture Risk

Room B

S2-2: Traumatic Brain Injury

10:30 IRC-26-87
Short Communication: CT-Derived Lesion Descriptors of Intracranial Haemorrhage and their Association with Injury Severity and Outcome
H Kelsey; T V Vyvere; V Newcombe; N Wang; A Marzo; F Lecky; X Yu
University of Sheffield, Antwerp University Hospital, University of Cambridge

10:38 IRC-26-88
Short Communication: Investigating TBI in Older Adults Using Age-Specific Finite Element Brain Models
B L Elkhatib; A A Alshareef
University of South Carolina

10:46 IRC-26-89
Short Communication: Experimental Assessment of Head Injury Mechanisms in Urban Falls of Vulnerable Road Users

C Baek; J Kim; J Cho; J Hu; D Lee
Hanyang University, University of Michigan Transportation Research Institute (UMTRI)

11:02 IRC-26-19
THUMSv7 Response and Injury Assessment Using Parametrised Restraints in a Stock Car Racing Environment
T Edinger; M Suchozebrski; N Morgan; J Patalak; S Muhkerjee; B Gepner
University of Virginia, National Association for Stock Car Auto Racing (NASCAR)

11:18 IRC-26-20
Short Communication: Influence of Costal Cartilage Geometry on Rib Strain in THUMS under Frontal Hub Impact
T Miyazaki; Y Takahira; H Imai; M Hamada; Y Nakane
Toyota

11:26 IRC-26-21
Short Communication: Subject-Specific Variation in Injury Response of the Thorax
A Robinson; A Wills; F S Gayzik
Wake Forest University School of Medicine, Virginia Tech

11:34 IRC-26-22
Short Communication: Evaluation of a Delta-Type Seat belt to Reduce Thoracic Loading in Frontal Impacts Using a Human Body Model
I Amamori; K Ueno; K Mizuno
Nagoya University

11:42 IRC-26-23
Short Communication: Effect of Postural Changes in Human Body Modeling of Ejection Seats
S K Shaffer; N Norton; J Schap; Z Hostetler; A Pant; L Frazer; M Davis; D P Nicolella
Southwest Research Institute, Elemance

11:50 IRC-26-24
Short Communication: Subject-Specific Modeling of Spinal Injury Risk Following Long Duration Spaceflight
T E Busquets; K S Devane; J D Stitzel; J Park; D A Madrid; L F Poveda; D D DiSerafino; J A Tooze; A A Weaver
Wake Forest University School of Medicine, Elemance

B Juanes; S Escalante; M Diez; C Deck; N Bourdet
CIDAUT Foundation, University of Strasbourg

10:54 IRC-26-90
Short Communication: Investigation of Intracranial Brain Deformation in Post-Mortem Human Subject Heads Due to Blunt-Force Impacts
J Demiannay; M Brannen; S Xu; A H Azadi; P Dehghan; S Goodwin; W Yahiaoui-Djerboua; R Taylor; K Poon; S Brien; M Vassilyadi; M D Cusimano; C Karton; T B Hoshizaki; O E Petel
Carleton University, University of Ottawa, Horizon Health Network, The Ottawa Hospital, St. Michael's Hospital

11:02 IRC-26-91
Short Communication: Non-Uniform Effects of Cerebral Volume on Subject-Specific Brain Strain Across Multiple Head Impacts
E Chan; M Ghajari
Imperial College

11:10 IRC-26-92
Short Communication: Influence of the pia mater modeling on the prediction of acute subdural hematoma
C Li; S Kleiven; Z Zhou
KTH Royal Institute of Technology

11:18 IRC-26-93
Short Communication: How does Pre-impact Head Rotation affect Impact-induced Brain Strain?
G P Siegmund; B S Elkin; S J Bonin
MEA Forensic Engineers & Scientists, University of British Columbia

11:26 IRC-26-94
Short Communication: Investigating the role of axonal strain in brain white matter damage using biomechanical modelling of normal pressure hydrocephalus
V Darvishi; M D Giovane; M C B David; M A Kolanko; P A Malhotra; C Carswell; D J Sharp; M Ghajari
Imperial College

11:34 IRC-26-95
Short Communication: Finite Element Modeling of Diffuse Axonal Injury Using Histologically Informed Microtubule Placements.
E Jakobsson; Z Zhou; S Kleiven
KTH Royal Institute of Technology

11:42 IRC-26-96
Short Communication: A Biomechanics-Informed Mathematical Framework for Early Tau Pathology Accumulation Following Traumatic Brain Injury
J González-Cabrero; C G S Cardoso; I Moreno-González; R J Alves-de-Sousa
University of Aveiro, University of Málaga

11:50 IRC-26-97
Short Communication: Mesh Convergence Depends on the Element Formulation of Finite Element Brain Models.
A Even; Z Zhou; S Kleiven
KTH Royal Institute of Technology

Room G
12:00 Lunch

NISSAN
lunch sponsor

Room A
13:30 Keynote Lecture

13:30 IRC-26-02
Blast Brain Injury - an ongoing story
C R Bass
Wayne State University

Room A
14:10 S1-3: Anthropometric Test Device Performance

14:10 IRC-26-25
Comparison of THOR-50M-RS to PMHS in Upright Frontal Sled Impacts
M K Gallaher; J-P Donlon; L M Mann; R T Hollar; I L Nazari; A P Mehta; J L Forman
University of Virginia

14:26 IRC-26-26
Biofidelity Evaluation of THOR-05F in Rear-Facing Seating Configurations
R L Carpenter; A Bendig; H Kwon; A Hagedorn; V Pradhan; J Stammen; K Moorhouse; Y-S Kang
Transportation Research Center (TRC), National Highway Traffic Safety Administration (NHTSA), The Ohio State University

14:42 IRC-26-27
Analysis of female occupant injuries from crash test data for Full Frontal Crash Tests conducted on Indian Passenger Vehicles
D Jaju; D Kulkarni; R Mahajan
The Automotive Research Association of India (ARAI)

14:58 IRC-26-28
EvaRID-50th Percentile Female Biofidelity Evaluation Assessed Against Volunteers in a Low-Speed Rear Impact

Room B
S2-3: Vulnerable Road Users - Pedestrians

Autoliv
session sponsor

14:10 IRC-26-98
How Effectively do Pedestrian Protocol Headform Tests Capture Pedestrian Head Injuries?
K S Devane; C Edwards; L Poveda; L Miller; W Armstrong; M Pollock; F-C Hsu; F S Gayzik; A A Weaver; J D Stitzel
Wake Forest University School of Medicine

14:26 IRC-26-99
Injuries and Physical Long-term Consequences of Pedestrians Due to Collisions with Cars. An Analysis of the In-Depth Data from Germany, United Kingdom and France
N Fattorini; M Wisch; L Smith; D Hynd; S Cuny; J Saadé
Federal Highway and Transport Research Institute (BASt), Transport Research Laboratory (TRL), CEESAR

14:42 IRC-26-100
A Large Parametric Finite Element Study of Pedestrian Injury Variability in the Current U.S. Vehicle Fleet
J Heo; K Rawska; N Morgan; B Gepner
University of Virginia

14:58 IRC-26-101
Wheel Contact in Subway Collisions: Impact Testing of a Wheel-guard Countermeasure for Amputations, Transections and Decapitations

D J Isopi; P J Depinet; A Steinhour; B Loeber; B Greenlees
Humanetics

15:15 IRC-26-29
Short Communication: Neck kinematics of average female and male dummy sizes in rear-impact tests at 16 km/h and 24 km/h
S Endo; I Reito; J Tanabe; M Y Svensson; A Linder
TS Tech, Swedish National Road and Transport Research Institute (VTI), Chalmers University

15:23 IRC-26-30
Short Communication: Sensitivity of the DAMAGE Injury Metric to Perturbations in Head Kinematic Signals
R B Iyer; H R Miller; B Mueller; M B Panzer
University of Virginia, Insurance Institute for Highway Safety (IIHS)

D Hall; J Spears; N Morgan; G Shaw
University of Virginia

15:15 IRC-26-102
Short Communication: Vision-Based Pedestrian-Vehicle Interaction Risk Assessment in Safety-Critical Scenarios
Y Luo; S Liu; W Lu; D Miao; Q Zhou; B Nie
Tsinghua University

15:23 IRC-26-103
Short Communication: Comparative Analysis of Chest Deflection-Rib Strain Correlation in Occupant Lateral Loading vs. Pedestrian Collision Scenarios
Y Long; Y Xiao; B Zhang; Z Xiao; Y Liu
China Automotive Engineering Research Institute, Hunan University

Room C (coffee also available in rooms D and E)

15:30 Coffee break

Room A

16:00 S1-4: Child Safety

16:00 IRC-26-31
Safety Assessment of Aftermarket Devices for Pregnant Occupants and Children: Market Analysis and Sled Testing
A Carlsson; A Kullgren
Chalmers Industriteknik/ Chalmers University, Folksam Insurance Group

16:16 IRC-26-32
Development of an Age-Specific Finite Element Brain Model to Advance Pediatric Crash Protection
G Wynn; M B Panzer
University of Virginia

16:32 IRC-26-33
Influence of Static Seat Belt Fit Parameters on the Dynamic Response of the Large Omnidirectional Child Dummy in Frontal Impacts
B Challa; S Noll; C Bendig; A Louden
The Ohio State University, Transportation Research Center Inc., National Highway Traffic Safety Administration (NHTSA)

16:48 IRC-26-34
Short Communication: Load-weighting Strategy between the Pre-pretensioner Belt and Neuromuscular Control in Forward-leaning Children in Frontal-Oblique Pre-crash Manoeuvres
V Graci; M Griffith; T Seacrist
Children's Hospital of Philadelphia, Drexel University

16:56 IRC-26-35
Short Communication: Restraint Use Among Children in Motor Vehicle Crashes in Ohio
G H Baker; A L Harden; M E Cole; J A Mansfield
The Ohio State University

17:04 IRC-26-36
Short Communication: Finite Element Analysis of Child Occupant Protection in Cargo Bikes
N Prasartthong; G Gstrein; D Kofler; E Tomasch; N Erlinger; C Klug
Graz University of Technology

Room B

S2-4: Vehicle Crashworthiness and Seat Design

16:00 IRC-26-104
Comparison of Non-Electric Vehicle Crashworthiness in Crash Tests with Electric Vehicles
K Tang; S Tylko; A Bussières
University of Waterloo, Transport Canada, PMG Technologies

16:16 IRC-26-105
Kinetics of Small Female PMHS in OEM vs. Spring-Controlled Seats
K Somasundaram; T Rooks; K Driesslein; F Pintar
Medical College of Wisconsin

16:32 IRC-26-106
Sensitivity of Lumbar Spine Loadings to Different Seat Characteristics and Human Body Model Boundary Conditions
M González-García; J Weber; S Peldschus; A Eggers
Volkswagen; University of Munich (LMU), Federal Highway and Transport Research Institute (BASt)

16:48 IRC-26-107
L-type Side Impact Intersection Crashes: Investigated Through Field Data and OEM FE Simulations
N Morgan; J S Kong; S H Hong; B Gepner; J Kerrigan
University of Virginia, Hyundai Motor Company

17:04 IRC-26-108
Short Communication: A Retrospective Study of Evolving Vehicle Architecture on Pitch and Vertical Kinematics using NHTSA Frontal Barrier Tests
W R Valdez; M Valdano; F J López-Valdés
Comillas Pontifical University

Altes Rathaus

18:00 Welcome Reception

Thursday, 10 September 2026

Room G

08:00 Registration

Room A

08:30 S1-5: Virtual Testing

8:30 IRC-26-37
Comparative Evaluation of Positioning Methods for Finite Element Human Body Models in Virtual Crash Testing: Implications for Mesh Quality and Injury Prediction
S Roka; P Lozano; S Dudhade; A Jaware
Applus IDIADA, Comillas Pontifical University, IDIADA India

8:46 IRC-26-38
Guidelines for Pelvis and Spine Positioning of Human Body Models for Application in Occupant Protection Simulations
Y K Vari; G Marini; K Wagner
Otto von Guericke University of Magdeburg, Audi AG

9:02 IRC-26-39

Room B

S2-5: Sports Injury

8:30 IRC-26-109
Incidence and Body Region Distribution of Reported Football (Soccer) Injuries: Insights from a National Insurance Database
H Stigson
Folksam Insurance Group

8:46 IRC-26-110
Short Communication: Investigation of Impact Angle Effect on Brain Strain Distribution in Football Headers Using a Detailed FE Brain Model
S Kitamura; Y Miyazaki; J Farmer; R England; I Phillips
Institute of Science Tokyo, Loughborough University

8:54 IRC-26-111
Short Communication: Computational Prediction of Mandibular Muscle Forces During Sporting Head Impacts
E Koumantou; J E Lloyd; B Sagl; M Ghajari
Imperial College, University of British Columbia, Medical University of Vienna

9:02 IRC-26-112

Transfer of Posture and Kinematics from Pre-Crash Madymo HBM to In-Crash VIVA+ Simulations for Holistic Vehicle Safety Analyses
D Kofler; N Fahse; F Ressi; J Fehr; C Klug

Graz University of Technology, University of Stuttgart

9:18 IRC-26-40
Influence of Equilibrium Initialisation on Human Body Model Responses in Crash Simulations
H Mirkhan; J D John; J Iraeus
Chalmers University of Technology

9:34 IRC-26-41
Short Communication: Assessment of Head Injury Mechanisms in Side Impacts Considering Posture, Anthropometry and Loading Conditions
J Abajo; M Diez; A Negro
CIDAUT Foundation

9:42 IRC-26-42
Short Communication: Sensitivity of Occupant Response to Seat Position Variations in Euro NCAP CP-551 Virtual Testing using THUMS and HIII
M Rees; S Peldschus; P Wernicke
BMW AG, Ludwig-Maximilians University

9:50 IRC-26-43
Short Communication: Update and Correlation of the Open Access LS DYNA Toyota Auris Seat Model for Rear-End Impacts
K-J Larsson; H Sundberg; M Videby; L Eriksson
Autoliv

Short Communication: Predicting Sport-Related Brain Injury via Head Kinematics, Finite Element Brain Modelling, and Plasma Biomarkers
J W Hickey; E Y K Chan; L J Evans; W T O'Brien; B Xie; S S Roberts; S E Butler; J Ernest; W J Q Zhou; K A Zimmerman; G Spitz; T D Parker; T J O'Brien; S R Shultz; D J Sharp; M Ghajari; S J McDonald
Monash University, Imperial College

9:10 IRC-26-113
Short Communication: Video-Based Estimation of Head Impact Velocities in Ski Competitions Accidents: A Comparison with Helmet Standard Impact Speed Requirements
M Ferrara; N Dall'Acqua; A Foltran; G Zullo; N Petrone
University of Padova, POC

9:18 IRC-26-114
Short Communication: Lower Leg Fracture Risk During Football Impacts Using Male, Female, and Child Human Body Models
E M Gray; A Shakib; C E Quenneville
McMaster University

9:26 IRC-26-115
Short Communication: Downhill Bicycles Full Scale Simulation of Crashes and Falls with a Hybrid III Dummy and a Launching Catapult
G Zullo; A Foltran; M Ferrara; P Bozza; L Facin; N Petrone
University of Padova, Alpinestars

9:34 IRC-26-116
Short Communication: Video-Based Identification of Sequential Body Impact Location Using Pose Estimation
E Henley; B Reilly; K Mayes; D Kuehl; N E-P Stark; S Rowson
Virginia Tech, Carilion Clinic

9:42 IRC-26-117
Short Communication: Head Impact Exposure and Strain-Based Injury Prediction Across Youth Ice Hockey
T Sims; C Karton; P Dehghan; A Azadi; T B Hoshizaki
University of Ottawa

9:50 IRC-26-118
Short Communication: Puck Impacts to Hockey Skates Evaluated via a Novel Instrumented Surrogate
E M Kupinski; C E Quenneville
McMaster University

Room C (coffee also available in rooms D and E)
10:00 Coffee break

Room A
10:30 S1-6: Novel Experimental Methods

10:30 IRC-26-44
Characterising Driver Chest Loading in Front Crash Tests Using Pressure Mat Measurements
M L Brumbelow
Insurance Institute for Highway Safety (IIHS)

10:46 IRC-26-45
Investigation of Risk Factors Contributing to the Occurrence of Posterior Rib Fractures
F J Lopez-Valdes; M Valdano; E Jokubaityte; A P Weiss; C J C Rubio; R Govardhan; S Baladaniya; J Padmanaban
Universidad Pontificia Comillas, Fundación Hospitalarias, JP Research India

11:02 IRC-26-46
Cervical Intervertebral Motion as a Soft-Tissue Injury Predictor for Neck Hyperextension in Low-Speed Rear Impacts
R Finfrock; A Bendig; C Thomas; W Millis; K Moorhouse; Y-S Kang
The Ohio State University, Transportation Research Center, National Highway Traffic Safety Administration (NHTSA)

11:18 IRC-26-47
Whiplash Evaluation Procedure for Predicting Rear-Impact Occupant Protection in Modern Vehicle Seats
M A Edwards; H S Bragg; M L Brumbelow
Insurance Institute for Highway Safety (IIHS)

11:34 IRC-26-48
Short Communication: An Assessment of a Body-first Test Rig in Comparison with Head Kinematics from Hybrid III Dummy Experiments and Human Body Model Simulations
S Hedenstierna; J Bergström; E Edblom; R England
Loughborough University

11:42 IRC-26-49
Short Communication: The Dynamic Response of FlexiForce Sensors for use in Injury Risk Assessments
C Brewer; C E Quenneville
McMaster University

11:50 IRC-26-50
Short Communication: Haemodynamic Disturbances Along the Aorta and the Resulting Deformations of the Aortic Arch Following Deceleration
E Nicolas; P Vezin
University of Lyon

Room B
S2-6: Developments in Human Body Models

10:30 IRC-26-119
Influence of Population Variability in Ligament Material and Vertebrae Geometry on Cervical Spine Responses
Y N Poojary; J Östh; J Davidsson; J John; J Iraeus
Chalmers University of Technology, Volvo Cars

10:46 IRC-26-120
Surrogate-based Global Sensitivity Analysis of Seat-belt Design Parameters on Thoracic Injury in Far-Side Impacts Using a Human Body Model
J Cho; C Baek; Y S Kang; D Lee
Hanyang University, Seoul, The Ohio State University

11:02 IRC-26-121
Improvement and Validation of THUMSv4.1 AM50 Face Model in Virtual Performance Solution and Development of Model Specific Facial Fracture Criteria
D Sahoo; G Marini
Volkswagen, Audi

11:18 IRC-26-122
Short Communication: A Trend-Guided Multi-Fidelity Framework for Efficient and Accurate Occupant Injury Prediction
T Lu; Y Yang; J Chang; Z He; Q Zhou; B Nie
Tsinghua University, Beijing Forestry University

11:26 IRC-26-123
Short Communication: Accelerating HBM Simulations Through Reduced Order Modelling: Impact of Model Choice and Training Data Size
J Aleksic; M Rees; P Wernicke; S Peldschus
Technical University of Munich (TUM), BMW AG, Ludwig-Maximilians University Munich

11:34 IRC-26-124
Short Communication: Development of Finite Element Models for Evaluation of Safety Footwear and Metatarsal Impact Protection
C E Birch; S D McLachlin; D Gierczycka; N Chandrashekar
University of Waterloo, Synopsys

11:42 IRC-26-125
Short Communication: Evaluation of Blunt Cardiac Trauma Volumetric Injury Risk Using Finite Element Models
P K Thomas; F-C Hsu; M Wolfson; F S Gayzik
Wake Forest University School of Medicine, Lewis Katz School of Medicine

11:50 IRC-26-126
Short Communication: A Subject-Specific Human Body Model Validation Workflow for Post-Mortem Human Subject Test Reconstruction
S Khandare; Y-S Lin; K J Boyle; M P Reed; J Hu
University of Michigan Transportation Research Institute (UMTRI)

Room G

12:00 Lunch

ADAC
lunch sponsor

Room A

13:30 Bertil Aldman Memorial Lecture

13:30 IRC-26-01
tba
P A Cripton
University of British Columbia

Room A

14:10 S1-7: Injury Analysis using Human Body Models

14:10 IRC-26-51
Tuned Rib Fracture Risk Functions for Human Body Models in Frontal and Side Impacts
J Heo; B Gepner; Z Sun; J Hallman; J Forman
University of Virginia, Toyota Motor North America

14:26 IRC-26-52
Influence of Rib Cortical Bone Age on Human Body Model Probabilistic Rib Fracture Risk Predictions
K-J Larsson; J Iraeus
Autoliv, Chalmers University of Technology

14:42 IRC-26-53
Strain-based Rib Fracture Prediction Using HBMs: A Comparison of Simulations Using State-of-the-art Models to PMHS Tests Considering Uncertainty
F Ressi; V Kannan; B Schneider; C Klug
Graz University of Technology

14:58 IRC-26-54
Development of Lumbar Spine Injury Risk Function for 50th Percentile THUMS v4.1 VW Group Male Model
P Yadav; F Neumann; D Sahoo
VAIVA GmbH, Volkswagen AG, University of Munich

15:15 IRC-26-55
Development of an injury risk function for a HBM with a specific fracture in the lower extremities
C Klein; K Kljajić; O Zehbe; S Kirschbichler; W Leitgeb
Virtual Vehicle Research GmbH

Room B

S2-7: Vulnerable Road Users - Cyclist and PTW

14:10 IRC-26-127
Safety benefit assessment for systems that protect vulnerable road users in collisions with heavy goods vehicles
R Schindler; J Shaikh; A Ranmal; G Li
Autoliv

14:26 IRC-26-128
Investigation of the Relationship between HIC and Impact Conditions in Scooter-type Powered-Two-Wheeler-to-Car Crashes
T Yanaoka; Y Gunji; Z H Zulkipli; T Matsushita; J Carroll; P Puthan; S A M Faudzi; K D-Wing; Y Miyazaki
Honda, Institute of Science Tokyo, Malaysian Institute of Road Safety Research (MIROS), Autoliv

14:42 IRC-26-129
A Bicyclist Airbag Vest on the SAFER Human Body Model: Protection of Shoulder, Thorax, and Head
B Li; J Carroll; B Pipkorn; N Lubbe
Autoliv, Chalmers University of Technology

14:58 IRC-26-130
PTW Rider Injury Mechanisms from Full-Scale Crash Testing Using PMHS
J Bolte; J Carroll; M V Meter; A Tesny; D Meringolo; E Higinbotham; S Meng; Y-S Kang; A Agnew
Injury Biomechanics Global Inc., Autoliv, Transportation Research Center Inc., NHTSA, The Ohio State University, 830 Engineering Group LLC

15:15 IRC-26-131
Short Communication: Crash and Injury Characteristics of Powered Three-Wheelers in India: Implications for Occupant Protection and Safety Regulation
J Shaikh; H Jeppsson
Autoliv

15:23 IRC-26-132
Short Communication: Development of a Realistic Thoracic Impact Test for PTW-to-Vehicle Crashes
D A Meringolo; J Carroll; Y-S Kang; J H Bolte
The Ohio State University, Autoliv, Injury Biomechanics Global Inc.

Room C (coffee also available in rooms D and E)

15:30 Coffee break

Room A

16:00 S1-8: Volunteer Testing

16:00 IRC-26-56
Repositioning Forward-leaning-vehicle Occupants During Normal Driving and Harsh Braking
J Davidsson; S Samadiboushehri; E Larsson; D Bråse; J Östh
Chalmers University of Technology, Autoliv, Volvo Cars

16:16 IRC-26-57
Short Communication: Characterisation of Driver Evasive Postures During Quasi-Realistic Collision Events
Z Zhao; G Kuang; T Lu; Q Zhou; B Nie; G Tierney; S Shang
Beijing Forestry University, Tsinghua University, Ulster University

16:24 IRC-26-58
Short Communication: Collision Reduction is Not the Whole Story: Injury-Oriented Safety Evaluation of Human–Vehicle Interaction Across Automated Driving Levels
D Qin; J Shen; H Wang; H Yu; K Zhao; Q Zhou; B Nie
Tsinghua University, Chongqing Changan Automobile

16:32 IRC-26-59
Short Communication: Optimised Reproduction of Coupled Longitudinal-Lateral Pre-Crash Accelerations Using a Rotated Low-G Sled Setup
N Fahse; P Rodegast; F Ressi; D Kofler; C Klug; J Fehr
University of Stuttgart, Graz University of Technology

16:40 IRC-26-60
Short Communication: Development of Spinal Geometry Corridors for Upright and Reclined Seated Postures
T Izumiyama; N Nishida; R Asahi; M Koike
Mazda Motor Corporation, Yamaguchi University Hospital

16:48 IRC-26-61
Short Communication: Volunteer Fall Experiments in Principal Fall Directions During Bus Braking Manoeuvres

Room B

S2-8: Validation of Human Body Models

16:00 IRC-26-133
Towards Biofidelity Assessment of Upper Extremity of a 50th Percentile Male Finite Element Human Body Model
R B Iyer; A P Mehta; A Hederskog; C Lundgren; B Gepner; J L Forman
University of Virginia, Autoliv

16:16 IRC-26-134
Ability of Human Body Models to Represent Injury Patterns Observed in PMHS Tests and Field Data
D Draper; M Rees; P Wernicke; S Peldschus
BMW AG, LMU Munich

16:32 IRC-26-135
Short Communication: The Influence of Element Formulation on Seated Pressure Predictions in a Human Body Model
D Pensado; S H Mischo; A Kalmar-Gonzalo; F S Gayzik
Wake Forest University Center for Injury Biomechanics

16:40 IRC-26-136
Short Communication: Preliminary Facial Impact Model Evaluation for Micromobility Injury Assessment
S Abe; J Iraeus; M Svensson; J John
Chalmers University of Technology

16:48 IRC-26-137
Short Communication: Computational Simulation of Experimental Frontal Sled Tests with the GHBMC M50 Model

J-C Xu; A Carlsson; Z Zhou; C Ahlström; S Kleiven
KTH Royal Institute of Technology, Swedish National Road and Transport Research Institute (VTI), Chalmers University of Technology, Linköping University

16:56 IRC-26-62
Short Communication: Monocular Video-to-Kinematics Pipeline for Injury Reconstruction

W Li; S Kleiven; X Li

KTH Royal Institute of Technology

F Auriault; P Baudrit; P Petit; E Song
CEESAR, LAB

16:56 IRC-26-138
Short Communication: PMHS-Based Validation of the HBM-Connect™ 50th Percentile Male in High-Speed Rearward-Facing Frontal Impacts on a Homogeneous Seat Bench

R Tejero de la Piedra; M Riolet; T Arora; R Jagadish; Y-S Kang; Ö Dönmez; O Vaculin; A Soni; C Shah
Humanetics, The Ohio State University, TH Ingolstadt

17:04 IRC-26-139
Short Communication: Warping Points in Arc-Length-Based Averages Have a Substantial Effect on Computed Biomechanical Response Corridors and Objective Ratings Methods
D C Hartlen; D S Cronin
University of Waterloo

17:30 Student-Get-Together (student delegates only)

Elemance
supporter

Hofbräuhaus

19:30 Conference Dinner

Friday, 11 September 2026

luggage in Room G

08:00 Registration

Room A

08:30 S1-9: Crash Data and Analysis I

8:30 IRC-26-63
Causes of Spinal Injuries in Rear Crashes from the Crash Injury Research and Engineering Network (CIREN)
C S Parenteau; R W Rudd; D Camacho
Design Research Engineering, National Highway Traffic Safety Administration (NHTSA), Camacho Consulting

8:46 IRC-26-64
Influence of Driver Stature and Seat Position on Injury Risk in Frontal Car Crashes: A Comparative Analysis of Field Data and Human Body Model Simulations
M Östling; D Schmidt; H Jeppsson; L Erikson; T Lich
Autoliv, Robert Bosch

9:02 IRC-26-65
Using Police-Reported Rear-crash Data to Assess IIHS's Whiplash Prevention Evaluation

M L Brumbelow; M A Edwards

Insurance Institute for Highway Safety (IIHS)

9:18 IRC-26-66
Pedestrian Injury Severity Prediction Based on Logistic Regression Using Real-World Crash Data for AACN Systems
S Ejima
Subaru Corp.

9:34 IRC-26-67
Short Communication: A Comparative Crash Database Study of Upper Extremity Injury Patterns among Car Occupants in the USA and Germany
A Hederskog; R Schindler; A P Mehta; J Forman
Autoliv; University of Virginia

9:42 IRC-26-68
Short Communication: Relative Risk in Heavy Goods Vehicle Rollover Crashes Using Crash Databases from the USA, Germany and India
L Al-Salehi; A Ranmal; R Schindler; H Jeppsson; P A Cripton
University of British Columbia, Autoliv

9:50 IRC-26-69
Short Communication: Intrusion Characteristics and Occupant Body Size in Driver Entrapment: An Attention-Based Analysis of Real-World Crash Data
Y Mei; F Sato; Y Miyazaki
Institute of Science Tokyo, Japan Automobile Research Institute

Room B

S2-9: Tissue Mechanics

8:30 IRC-26-140
Preliminary Investigation of the Tensile and Compressive Material Properties of Pelvis Cortical Bone Guided by Microstructural Imaging
D L Albert; R L Hunter; Z A Haverfield; A M Agnew
Virginia Tech, The Ohio State University

8:46 IRC-26-141
High-resolution Computed Tomography (microCT) Technique for Capturing Soft Tissue Intervertebral Disc Changes After Repeated Loading
C F Morino; S T Middleton; E D Dimbath; J R Kait; J F Luck; C R D Bass
Duke University, Wayne State University

9:02 IRC-26-142
Short Communication: Sex Differences in Distal Tibial 3D Bone Microstructure Explained by Body Size
Y Kim; A M Agnew; Y-S Kang; D Cronin; B Watson; D Boyle; Z Sun; A L Harden; R L Hunter

The Ohio State University, University of Waterloo, Toyota

9:10 IRC-26-143
Short Communication: Strain-Based Interpretation of Lumbar Endplate Injury Risk Incorporating Creep Loading and Recovery Behavior
E D Dimbath; C F Morino; J F Luck; C R Bass
Duke University, Wayne State University

9:18 IRC-26-144
Short Communication: Improving Injury Severity Repeatability in an in Vivo Porcine SCI Model Through an Analysis of Spinal Cord Stiffness During Impact
A Borjali; K So; A A Brown; N Manouchehri; J Mitchell; S Jarlsdottir; F Streijger; B Kwon; P A
University of British Columbia

9:26 IRC-26-145
Short Communication: Comparison of Particulate Matter Eye Injury Between PMHS and Porcine Eye Surrogates
P K Thomas; E Ablordeppey; K Slaman; M A Greven; P J Brown; F S Gayzik
Wake Forest University School of Medicine

9:34 IRC-26-146
Short Communication: Lung Shock Injury Behind Body Armor

D Pang; M Panzer; K Sirhan; J O Eynde; R Salzar; J McEntire; C Bass
Wayne State University, University of Virginia, United States Army Aeromedical Research Laboratory (USAARL)

9:42 IRC-26-147
Short Communication: Comparison of the Temporary Cavity Properties Observed in Gelatine Compared to Porcine Tissue
A M Paterson; T-T N Nguyen; A M J Bull; S D Masouros
Imperial College

9:50 IRC-26-148
Short Communication: The Influence of Tension-Compression Switches on Brain Anisotropic Modelling
C Li; S Kleiven; Z Zhou
KTH Royal Institute of Technology

Room C (coffee also available in rooms D and E)

10:00 Coffee break

Room A

10:30 S1-10: Crash Data and Analysis II

10:30 IRC-26-70
Deriving ISO 26262 S-parameters: Unifying Functional Safety Severity with RAPEX HARM
J Krampe; M Junge
Technical University Braunschweig, Volkswagen AG

10:46 IRC-26-71
Risk Factors for Lower Extremity Injuries across Injury Severity among Cab-over-engine Light Truck Occupants in Road Traffic
S Baek; K Lee; S Kim; C Kang; B Lee; O Kim
Yonsei University Wonju College of Medicine

11:02 IRC-26-72
Closed-Group Injury Risk Functions for Frontal Crashes – Integrating Lethality and Long-Term Consequences
M Plenter; M Junge
Volkswagen AG

11:18 IRC-26-73
Injuries Leading to Permanent Medical Impairment among Road Users Groups
H Stigson; A Kullgren
Folksam Insurance Group

11:34 IRC-26-74
Lumbar Spine Injuries in front seat occupants in frontal collisions leading to Long-Term Consequences
S Schick; D Hynd; N Fattorini; M Wisch; J Saadé
Ludwig-Maximilians-University (LMU), Transport Research Laboratory (TRL), Federal Highway and Transport Research Institute (BASt), European Centre for Safety Studies and Risk Analysis (CEESAR)

11:50 IRC-26-75
Zeroing in on Traffic Fatalities in the United States: Using a Safe System Attribution Schema to Determine Fatal Cases Eliminable by Automated Vehicle Fleet Conversion
E T Campolettano; J M Scanlon; K D Kusano; T Victor
Waymo

12:06 IRC-26-76
Short Communication: Airbag vest effectiveness in reducing thoracic injuries among PTW riders in road crashes: An epidemiological study
F Saint-Louis; L Agier; O Cherta-Ballester; V Honoré; O Monneuse; C Vernet
Gustave Eiffel University, In&motion, Edouard Herriot Hospital

12:14 IRC-26-77
Short Communication: MMDLNet: A Multimodal Deep Learning Network for Post-Collision Injury Prediction
Z Zou; M Elsegood; G Ponte; S Doecke; A Majumdar; C E Baker
Imperial College, University of Bristol, Adelaide University

12:22 IRC-26-78
Short Communication: Demographic Patterns in Seating Position Among Crash-Involved Front-Row Occupants in Ohio, USA.
A L Harden; M E Cole
The Ohio State University

Room B

HUMANETICS
session sponsor

S2-10: ATD Model Development and Analysis

10:30 IRC-26-149
Influence of Initial Head Position on Concussion Risk in Rear-End Vehicle Collisions
K Gilliland; T Sims; J Colangelo; C Karton; T B Hoshizaki; C H Tator; A Azadi
University of Ottawa

10:46 IRC-26-150
Sensitivity Analysis of THOR-50M Thorax Injury Criteria to Test Variations in a Vehicle Driver Configuration
D Furukawa; A Eggers
Toyota, Federal Highway and Transport Research Institute (BASt)

11:02 IRC-26-151
Evaluating Injuries in Cyclist–Car Accidents using Conventional Dummies and Human Body Models
S Tomassi; A Scattina; D Holder; J Fehr
Politecnico di Torino, University of Stuttgart

11:18 IRC-26-152
A Finite Element Model of the Crash Test Dummy SET v0.2 50F for Low Severity Rear Impacts
A Linder; N Omichi; V Alvarez; S Hayashi; N Takagi; M Svensson; J D John
Swedish National Road and Transport Research Institute (VTI), Toyota, Lightness by Design, Chalmers University of Technology

11:34 IRC-26-153
Lumbar Spine Injury Assessment of Frontal Crash Occupants: Translating HBM Metrics to THOR ATDs
S K Tushak; K Rawska; J R Kerrigan; A F Caudillo-Huerta; B Gepner
University of Virginia

11:50 IRC-26-154
Short Communication: Assessment of Ankle Injury Mechanisms in Vehicle Crashes: A Comparative Simulation-Based Study Using HBMs and an ATD
R B Iyer; B Gepner; M Jayathirtha; J Hallman; J Forman
University of Virginia, Autoliv, Toyota

11:58 IRC-26-155
Short Communication: Comparison of 5th Percentile Female THOR ATD, THOR FE Model, and Human Body Model Chest Deflection in Frontal Crash
B Watson; K Tang; S Tylko; D S Cronin
University of Waterloo, Transport Canada

12:06 IRC-26-156
Short Communication: Leveraging Abdominal Pressure Sensors in the THOR-05F Finite Element Model to Predict the Onset of Lap-Belt Submarining
A Kalmar-Gonzalo; B Koya; K Devane; F-C Hsu; D Sherman; C D Bass; C Bir; F S Gayzik
Wake Forest School of Medicine, Wayne State University

12:14 IRC-26-158
Short Communication: Skull Fracture Risk Transfer from a Human Body Model to a Dummy Head for High Speed Impact Conditions
P Beillas; C Pozzi; M Gardegaront
Université Gustave Eiffel

Room A

12:40 Conference Wrap-up & Prizes

Room C

13:00 Take Away Lunch