Symposium on Interaction of the Effects of Munitions with Structures

2011

Computational Methods - Airblast		
Dr. Kent Danielson, US Army Engineer Research and Development Center	Lagrangian Meshfree Methodologies for Predicting Buried Munitions Detonations	
Mr. Cliff McFarland, SAIC	Nitromethane-Generated Blast Loads: A Sensitivity Study	
Mr. Vincent Chiarito, USACE-ERDC	Blast and Impact Comparisons of Experimental and Numerical Data PAPER NOT INCLUDED	
Dr. James Tarter, Applied Research Laboratory, Pennsylvania State University	Fully Coupled Blast Analysis and Digital Image Correlation Testing of Near- Field Detonation Events for Transparent Glass Panels	
Ms. Patricia Bowles, Protection Engineering Consultants	Assessment of Modeling Tools for Blast in an Urban Environment	

Computational Methods		
Dr. Gianluca Cusatis, Rensselaer Polytechnic Institute	Myth and Reality of Multiscale Modeling of Concrete and Other Quasi-Brittle Materials PAPER NOT INCLUDED	
Mr. Tobias Linse, Universität der Bundeswehr München	Modeling Masonry Under Dynamic Loadings, Material Modeling, and Numerical Simulations Presented by: Professor Dr. Norbert Gebbeken	
Dr. Christophe Pontiroli, CEA-Gramat (Atomic Energy Commission)	Soft Projectile Impacts on Thin Reinforced Concrete: Tests, Modeling, and Simulations	
Dr. Ali Amini, Defense Threat Reduction Agency	Modeling Blast Wave Propagation in a Generic Facility Presented by: Dr. Joseph Baum	

Structural Response		
Mr. Brian Young, AWE	Blast Testing of Mechanical Couplers for Reinforced Concrete Explosives Facilities	
Mr. Ken Spranghers, Vrije Universiteit Brussel	Material Characterization of Blast-Loaded Plates Presented by: CAPT Dr. David Lecompte	
Dr. Marlon Bazan, Protection Engineering Consultants	Steel Frame Structure Performance in Blast Environments Presented by: Mr. Aldo McKay	
Mr. Rob Fielder, AWE	Demonstration of the Robustness of TM5-1300/UFC 3-340-02 Methods	
Mr. Jyrki Ronkainen, Temet Oy	Low-Pressure Blast Testing of Large Blast Dampers	

Fast Running Models - Loads		
Mr. Scott Frank, Applied Research Associates	Geometric Principles of Airblast Effects in an Urban Canyon	
Dr. Charles Oswald, Protection Engineering Consultants	Fast-Running Analysis to Predict Blast Pressure Propagation Through Failing Walls From Internal Explosions	
Mr. Paul Morrissy, QinetiQ	Propagation of Blast in Internal Environments for Fast-Running Engineering Models	
Ms. Amy Tank, NUMERICS GmbH	Rapid Calculation of Urban Blast Propagation Using FI-BLAST	
Dr. Andre Delmas, CEA-Gramat (Atomic Energy Commission)	The Pleiades Vulnerability/Lethality Analysis Suite	

Protective Design		
Dr. James O'Daniel, US Army Engineer Research and Development Center	Underwater Explosion Bubble-Jetting Effects on Structures	
Ms. Ans van Doormaal, TNO	Safety and Protection of Built Infrastructure to Resist Integral Threats	
Dr. David Stevens, Protection Engineering Consultants	Mitigation of Explosive Attacks on Pipeline Systems	
Mr. Andrew Coughlin, Hinman Consulting Engineers	Designing for Close-in Blasts Using Spall-Resistant Cementitious Composites PAPER NOT INCLUDED	

Protective Design		
Mr. Reuben Eytan, Eytan Building Design Ltd.	Blast-Resistant Windows and Curtain Walls - Existing Buildings PAPER NOT INCLUDED	
Mr. Reuben Eytan, Eytan Building Design Ltd.	Blast-Resistant Windows and Curtain Walls - New Buildings PAPER NOT INCLUDED	
Mr. Brian Katz, Hinman Consulting Engineers, Inc.	An Integrated Approach to Façade Design and Multi-Hazard Risk Mitigation	
Dr. Bryan Bewick, Air Force Research Laboratory, Engineering Mechanics Section, AFRL/RXQE	Conventional Steel Stud Construction for Retrofit Systems	
Mr. Patrick Lindsey, USACE, Protective Design Center	Current Practices for Blast Window Design	

Computational Methods		
Dr. Orlando Soto, Science Applications International Corporation	An Efficient Coupled Fluid/Structure Finite Element Scheme to Simulate Fracture of Reinforced Concrete Structures Under High Strain-Rate Blast and Impact Loads	
Dr. Mary Brown, Applied Research Associates	Wall Impact Reaction Modeling in SHAMRC	
Dr. Michael Seica, Halcrow Yolles	Behavior of Square Hollow Section Steel Members Under Transverse High- Impact Loading	
Mr. William Seipel, US Army Corps of Engineers Protective Design Center	Creation and Implementation of Generic Computational Fluid Dynamic Seed Files PAPER NOT INCLUDED	

Progressive Collapse		
Dr. Bing Li, Nanyang Technological University	Overview of Current Study on Progressive Collapse-Resistant Behavior of Non- seismically Detailed Reinforced Concrete Frame Structures in Singapore	
Dr. Eric Hansen, Weidlinger Associates, Inc.	Progressive Collapse Testing and Simulation	
Dr. H.S. Lew, National Institute of Standards and Technology	An Experimental Study of Full-Scale Precast Concrete Assembly Subjected to a Column Removal Scenario PAPER NOT INCLUDED	
Dr. Eric Williamson, University of Texas at Austin	Experimental Evaluation of Floor Slab Contributions in Mitigating Progressive Collapse of Steel Structures	
Dr. Ali Amini, Defense Threat Reduction Agency	An Instrumented Full-Scale Building Progressive Collapse Test Presented by: Mr. Craig Sheffield	

Underground Detonations		
Dr. Dale Pace, ESCS	Ground Shock Simulation Uncertainty Presented by: Dr. Eugene Sevin	
Dr. Eng-Choon Leong, Nanyang Technological University	Peak Parameters From an Underground Explosion	
Dr. Sarma Anand, Defense Science and Technology Agency, Singapore	Incident Pressure on Buried Structures Due to Ground Shock Presented by: Dr. Eng-Choon Leong	
Dr. David Yankelevsky, National Building Research Institute, Technion-ISRAEL	Institute of Technology Effect of Inclusions on Buried Lined Tunnel Response to Nearby Underground Explosion DO NOT HAVE PERMISSION TO INCLUDE PAPER	
Dr. Sam Clarke, The University of Sheffield	The Influence of Soil Density and Moisture Content on the Impulse From Shallow Buried Explosive Charges	

Protective Materials		
Mrs. Carrie Davis, Protection Engineering Consultants	Comparison of Composite Cementitious Materials to Traditional Systems Subjected to ATFP Threats	
Dr. Masuhiro Beppu, National Defense Academy	Impact-Resistant Performance of Short-Fiber Reinforced Concrete Plates Under High-Velocity Impact Loading	
Mr. Christopher Genelin, AFRL/RXQEM	Laboratory Screening Methods for Candidate Predetonation Materials	
Mr. Ernesto Gasulla, Baker Engineering and Risk Consultants, Inc.	Use of Shotcrete for Fragment Penetration Upgrade of Existing Buildings	

Internal Detonation		
Dr. Werner Arnold, MBDA-TDW	Modeling Internal Detonations of Cased Charges	
Dr. Michel Sturtzer, ISL, French German Research Institute of Saint Louis	Enhanced Blast Evaluation in Confined Bunker DO NOT HAVE PERMISSION TO INCLUDE PAPER	
Dr. Fumiya Togashi, SAIC	Numerical Simulation of the Blast Wave Generated by Heavily Aluminized Explosive in Confined Facility	
Dr. David Yankelevsky, National Building Research Institute, Technion-ISRAEL Institute of Technology	A Simplified Model to Assess the Gas Pressure Developed in a Confined Explosion and Its Venting Relief Rate Presented by: Dr. Yuri Karinski	

Protective Materials - UHPC		
Mr. Joseph Magallanes, Karagozian & Case	Modeling UHPC Materials With the K&C Concrete Model	
Mr. Daniel Koch, University of Florida, Center for Infrastructure Protection and Physical Security	Experimental Investigation of Normal Strength and Ultra-High-Performance Concrete Beams Under Impact	
Mr. Roman Lenner, University of the German Armed Forces	Concrete Fiber Reinforcement: Structural Material and Use for Supporting Structure Planning and Physical Protection Against Weapons Effects	
Ms. Tricia Caldwell, University of Florida, Center for Infrastructure Protection and Physical Security	Analysis of Normal Strength and Ultra-High-Performance Reinforced Concrete Columns Presented by: Dr. Serdar Astarlioglu	

Testing		
Mr. Tony Harris, US Army Materiel Systems Analysis Activity	AMSAA Support to the Urban Environment Test Capability (UETC) Study PAPER NOT INCLUDED	
Dr. Jason Florek, BakerRisk	Design Aspects for New Construction of a Test Firing Range Presented by: Mr. Khaled El-Domiaty	
Dr. Thomas Kisters, Fraunhofer Institute for High Speed Dynamics, Ernst-Mach-Institut	Development of a Novel High-g Accelerometer and Applications With Autonomous Recorders	

Fragmentation & Debris		
Dr. Joseph Baum, SAIC	Modeling a Rocket Warhead Detonation and Fragmentation Using a 3D Nonlinear Finite Element Code	
Mr. Peter Kummer, Bienz, Kummer & Partner Ltd.	Protection Given by Buildings Against Fragment and Debris Throw From Terrorist Attacks or Accidental Explosions	
Dr. Bengt Vretblad, National Defence College	Combined Blast and Fragment Effects in the New Swedish Design Manual for Protective Construction, FKR	
Mr. John Moxnes, Norwegian Defence Research Establishment	A New Fracture Model for Tungsten Carbide Presented by: Mr. Jan Arild Teland	
Mr. William Seipel, US Army Corps of Engineers Protective Design Center	Fragment Penetration Into a Ballistic Gel Material Using Similitude Analysis Techniques PAPER NOT INCLUDED	

Progressive Collapse		
Mr. David Cormie, Arup Security Consulting	Research Review of UK Building Regulations Requirements for Design Against Disproportionate Collapse in Commercial Buildings	
Dr. Joseph Main, National Institute of Standards and Technology	Modeling of Bolted Connections for Collapse Analysis of Steel Structures	
Mr. Yong Hong Koh, University of Florida, Center for Infrastructure Protection and Physical Security	Characterizing an Interior Reinforced Concrete Beam-Column-Slab Subassemblage Connection for Efficient Progressive Collapse Assessment	

Expeditionary Structures		
Mr. Carl Elfving, Swedish Fortifications Agency	Design Manual for Protective Construction	
Mr. Torsten Lindner, Bundeswehr Technical Center for Protective and Special Technologies - WTD 52	Passive Protection of Out-of-Area Infrastructure Against RPG 7 Threat PAPER NOT INCLUDED	
Dr. Frederick Hulton, Explora Security Ltd.	The Development of Protective Structures for Northern Ireland 1992-2001	
Mr. Balz Cavelti, Heierli Consulting Engineers Ltd.	CHE Camp Protection Concept for Peace Support Missions Handbook for PSO Missions, Threat and Risk Analysis Passive Protection Measures, and Field Tests	

Structural Response		
Dr. James Tarter, Applied Research Laboratory, Pennsylvania State University	A New Analysis Method for Predicting Large-Scale Damage in Masonry Structures Due to Close Proximity Explosive Detonation	
Dr. Oren Vilnay, Ben-Gurion University of the Negev	Structural Damage Assessment Procedure of Reinforced Concrete Structure Subjected to Internal Explosion Presented by: Dr. David Ornai	
Mr. Avshalom Ganz, University of Florida, Center for Infrastructure Protection and Physical Security	Energy-Based Approach for Assessment of Loading Rate Effects in Concrete	
Mr. Torsten Döge, University of the German Armed Forces Munich	Calculation of Residual Carrying Capacities of Reinforced Concrete Structural Members	
Mr. Christoph Roller, Fraunhofer Ernst-Mach-Institut	Analysis and Prediction of Concrete Slabs Under Detonation Loading	

Penetration		
Mr. Hwun Park, Purdue University	Investigation of High-Speed Penetration Into Sand Presented by: Dr. Weinong Chen	
Ms. Alyson Armstrong, US Army Engineer Research and Development Center	Penetration Forcing Function Parameter Determination Using Exhaustive and Numerical Optimization Approaches	
Dr. Gianluca Cusatis, Rensselaer Polytechnic Institute	Multiscale Modeling of Projectile Penetration Into Concrete Targets PAPER NOT INCLUDED	
Mr. John Crawford, Karagozian & Case	Modeling Multi-hit Problems with LS-DYNA PAPER NOT INCLUDED	

MOUT		
Mr. Hendrik Lips, Dynamit Nobel Defence	Advancements in Subsonic-Penetrator Design for Shoulder-Launched Weapons Defeating MOUT Targets	
Ms. Ans van Doormaal, TNO	The Influence of Charge Characteristics on Breaching Efficiency DO NOT HAVE PERMISSION TO INCLUDE PAPER	
Dr. Stefan Greulich, NUMERICS GmbH	Penetration Modeling in MOUT Materials	
Ms. Ans van Doormaal, TNO	Study Into Breaching of Wall Materials DO NOT HAVE PERMISSION TO INCLUDE PAPER	
Mr. Erik Merilo, SRI International	Measurement of Secondary Fragment Distribution From Embedded Detonations in Concrete	

Risk Assessment		
Mr. Frank Radtke, Fraunhofer Ernst-Mach-Institut	Extension of the German Explosive Safety Quantitative Risk Analysis Tool ESQRA-GE to Analyze Explosive Ordnance Disposal and Improvised Explosive Device Scenarios	
Mr. Martin Voss, Fraunhofer Ernst-Mach-Institut	Development of a Risk Analysis Tool for Field Camp Protection Against Rocket, Artillery, and Mortar Threats Presented by: Mr. Christoph Rizzuti	
Mr. Hans Dirlewanger, Bundeswehr Technical Center for Protective Special Technologies	Risk Analysis in Regional Planning and for the Optimization of Protected Infrastructure Under RAM Threats	

Protective Design		
Mr. Kai Fischer, Fraunhofer Ernst-Mach-Institut	Full-Scale Validation of a Blast-Proof Masonry Wall System and Assessment of Coupling Effects Using a TDOF Model	
Dr. Joseph Baum, SAIC	On the Design of Protective Entrances	
Dr. Alex Remennikov, University of Wollongong	A High-Performance Protective Barrier Utilizing Noncomposite Steel-Concrete- Steel Panels	
Dr. Shane Torbert, George Mason University	Adjoint-Based Design of Vestibules to Secure Building Entrances	
Dr. Kevin Scherbatiuk, DRDC Suffield	Analytical Model for Response of Concrete Barriers Subjected to Blast Loading	

Fast Running Models - Response		
Dr. Ronald Shope, ABS Consulting	Development of Simplified Damage Charts for Chemical Containers Subjected to Improvised Explosive Devices	
Dr. Charles Oswald, Protection Engineering Consultants	Improvements to SBEDS Software for Design and Analysis of Blast-Loaded Structural Components	
Dr. Serdar Astarlioglu, University of Florida, Center for Infrastructure Protection and Physical Security	A Software Suite for Expedient Analysis of Structural Components Under Blast and Impact Loads: DSAS v. 4.0	
Mr. Achim Pietzsch	Blast-Loaded Masonry Walls: Full-Scale Tests and Model Development	
Dr. Stephen Whitehouse, Applied Research Associates, Inc.	A Systematic Approach for Generating Component Fragility Data	

Protective Design		
Mr. Patrick Lindsey, USACE, Protective Design Center	Changes to the UFC 4-010-01 Conventional Construction Standoff Distances	
Mr. John Geringer, USACE, Protective Design Center	Multi-Hazard Design and Blast Loads	
Mr. Eric Martin, USACE, Protective Design Center	New Thoughts on the Progressive Collapse Criteria Presented by: Mr. Patrick Lindsey	
Mr. Rolf Dalenius, Swedish Fortifications Agency	The Threat and Protection Handbook for Camps: A Swedish Way of Accumulating Specific Knowledge on Protection Presented by: Mr. Anders Persson	
Dr. Omar Abdelalim, Carleton University	Modeling and Numerical Study on Blast Assessment With Vented Suppressive Shields	