

Technical Program



2008 Directed Energy Systems Symposium

Beam Control Conference

DE Effects Mitigation Conference

DE Modeling and Simulation Conference

Employment of DE Weapons Conference

HEL Lethality Conference

HPM Systems Workshop

3 - 7 March

Monterey, California

Information.....	1
Overview of Sessions.....	14 & 15
MONDAY	
Short Courses.....	2
Welcome Reception	
TUESDAY AM	
Plenary Session (SYMPOSIUM)	3
TUESDAY PM	
Adaptive Optics (BC)	4
Plenary Session (M&S)	5
Force Employment Illustration/Wargame (EMPLOY)	6
Keynote - Threat Description - System Test Results	
Material Interaction (LE)	7
WEDNESDAY AM	
Test Results (BC).....	8
DE Effects Mitigation (EM)	9
HEL Device (M&S)	10
How DE Changes the Battlespace (EMPLOY).....	11
Material Interaction (LE).....	12
WEDNESDAY PM	
Symposium Joint Session (JOINT).....	13
Reception at Monterey Bay Aquarium	
THURSDAY AM	
Aero Optics (BC)	16
Hardware (BC).....	17
DE Effects Mitigation (EM)	18
DE Systems (M&S).....	19
System Applications (EMPLOY)	20
System Modeling and Analysis & EO/IR Sensor Susceptibility (LE).....	21
Counter Electronics (HPM)	22
THURSDAY PM	
Tracking and Stabilization (BC)	23
HEL Engagement (M&S)	24
Systems Applications (EMPLOY)	25
EO/IR Sensor Susceptibility, & Test Facilities, Instrumentation, Diagnostics & Techniques (LE)..	26
FRIDAY AM	
HEL (JOINT).....	27
Non Lethal, Counter-IED (HPM).....	28
FRIDAY PM	
Closing Plenary (SYMPOSIUM)	29

General Information

Meals

Breakfast is available Tuesday through Friday in the Ferrantes Room at the Marriott.

Lunch is available at Hermann Hall at NPS Tuesday through Friday. Lunch is available Thursday in the Ferrantes Room at the Marriott.

Refreshment services will be available at all locations throughout the week.

The Welcome Reception will be held on Monday in the exhibit hall at the Marriott.

The Wednesday evening reception will be held at the Monterey Bay Aquarium.

Buses

The buses will begin at 1200 on Monday and run as follows:

Monday	1200 - 1715
Tuesday	0700 - 1745
Wednesday	0700 - 1730
Thursday	0700 - 1745
Friday	0700 - 1545

Buses will leave from the Marriott and drop off at various locations at NPS. One bus will circle from alternate hotels to the Marriott. We encourage attendees to not bring cell phones, laptops, or notebooks to NPS.

Buses will run on Wednesday evening starting at 1915 from the Marriott to the Monterey Bay Aquarium.

**AUDIO AND VIDEO RECORDING IS
PROHIBITED AT ALL DEPS
SPONSORED EVENTS**

MONDAY

Short Courses

- 0700 Registration at Marriott
0800 Short Courses Begin
- 1. Directed Energy 101 (PUBLIC RELEASE)**
George Harrison, Georgia Tech Research Institute
Marriott Hotel, Santa Barbara
 - 2. Introduction to FEL (FOUO)**
Bill Colson, Naval Postgraduate School
Marriott Hotel, San Diego
 - 3. Beam Control for Laser Systems (FOUO)**
Sal Cusumano, Air Force Institute of Technology
Marriott Hotel, San Carlos II
 - 4. HEL in the Extended Air Defense Simulation (FOUO)**
Jim Watkins, Space and Missile Defense Command
Marriott Hotel, Santa Monica
 - 5. Uncertainty Analysis for Laser Effects Testing and Analysis (FOUO)**
Nicholas Morley, Air Force Research Laboratory
Marriott Hotel, San Carlos III
 - 6. Beam Directors 101 (FOUO) ALL DAY**
William Decker, Defense Acquisition University
Marriott Hotel, San Francisco
- 1200 Break for Lunch
Buses begin to NPS
- 1300 Short Courses Begin/Resume
- 8. Atmospheric Effects (FOUO)**
Steve Fiorino, Air Force Institute of Technology
Marriott Hotel, Santa Diego
 - 9. HEL Effects (FOUO)**
Bob Thomas, Air Force Research Laboratory
Marriott Hotel, San Carlos II
 - 10. Active Denial Systems (CLASSIFIED)**

Naval Postgraduate School, ME Auditorium
 - 11. HPM Systems for Counter Material Applications (CLASSIFIED)**

Naval Postgraduate School, Spanigal Hall
- 1715 Last bus returns from NPS
1730 Welcome Reception at Marriott
2 in the Exhibit Hall

TUESDAY MORNING

PLENARY SESSION

Opening Plenary

NPS, King Hall

- 0700 **Registration and Breakfast at Marriott**
- 0715 **Buses begin to NPS**
- 0800 **Call to Order and Introduction**
Dr. J. Thomas Schriempf, NAVSEA PMS 405
- 0810 **Welcome**
VADM Daniel Oliver, Naval Postgraduate School, U.S. Navy (ret)
- 0815 **DSB Directed Energy Weapons Task Force: Reality Delays the Light**
Dr. Thomas Spencer, Air Force Research Laboratory
- 0900 **Directed Energy in the AF: “The Road Ahead”**
Maj Gen Charles Ickes, Acting Director of Irregular Warfare Requirements
- 0930 **Potential Surface Navy HEL Programs and Transition**
RADM James McManamon, Deputy Commander, Surface Warfare (SEA 21)
- 1000 **Break**
- 1030 **Army Laser Program Overview**
Mr. Matt Donohue, Office of the Deputy Assistant Secretary of the Army for Acquisition for Research & Technology
- 1100 **Emerging HEL Opportunities**
Mr. Mark Neice, High Energy Laser Joint Technology Office
- 1130 **Questions**
- 1200 **Lunch at NPS only**
Sponsored by Applied Energetics

TUESDAY AFTERNOON

BEAM CONTROL

Adaptive Optics (FOUO)

Marriott Hotel, San Carlos III

Chair: *Rich Carreras*, Air Force Research
Laboratory

- 1300 **Deep Turbulence Effects Compensation: Analysis and Experimental Demonstration of a Cascaded Adaptive Optics System Using AMOS 3.6 m Telescope**
Mikhail Vorontsov, Army Research Laboratory
- 1330 **Compensation of Atmospheric Aberrations Using Adaptive Optics: Field Test Results**
Ken Triebes, Northrop Grumman Space Technology
- 1400 **An Experimental Demonstration of Full-Wave Conjugation Using Two Continuous Face Sheer DMs: Theory and Simulation**
Keith Wojciechowski, Science Applications Interational Corporation
- 1430 **Break**
- 1500 **An Experimental Demonstration of Full-Wave Conjugation Using Two Continuous Face Sheer DMs: Experimental Demonstration**
Chip Beckner, Air Force Research Laboratory
- 1525 **Beam Control Enhancement Through Application of Phase Diversity**
Kurt Gleichman, General Dynamics-AIS
- 1550 **Beam Control Topics for the NGAS Adaptive Optics System**
Jim Negro, Boeing-SVS
- 1615 **Optical Phased Array Beam Control for APPLE**
Terry Dorschner, Raytheon NCS
- 1640 **Phased Array Beam Control for HEL Applications**
Kevin Probst, The CORE Group

TUESDAY AFTERNOON

MODELING & SIMULATION

Plenary Session (SECRET)

NPS, ME Auditorium

- 1200 Buses begin to NPS
- 1300 ABL Lessons Learned with M&S

- 1330 Issues in Modeling and Simulation of Solid-State and Fiber Lasers

- 1400 The Airborne Aero-Optics Laboratory: The Use of Simulation and Modeling in Its Development

- 1430 Break
- 1500 Engineering Challenges for High Power Applications of Electric Discharge Oxygen-Iodine Lasers

- 1530 Boost Tier Defense HEL Technologies and Architectures

- 1600 M&S Lessons Learned - The Army's Perspective

- 1630 Laser Applications for Space Situational Awareness

- 1745 Last bus leaves NPS

TUESDAY AFTERNOON

EMPLOYMENT OF DE WEAPONS

Force Employment Illustration / Wargame (SECRET)

NPS, Ingersoll Hall

- 1200 Buses begin to NPS
- 1310 Army Illustration / Wargame
- 1350 Air Force Illustration / Wargame
- 1430 Break
- 1500 Navy Illustration / Wargame
- 1550 Questions for Service Briefers
- 1630 Panel Discussion: FO/GO Observations
- 1745 Last bus leaves NPS

TUESDAY AFTERNOON

HEL LETHALITY

Keynote (SECRET)

NPS, Glasgow Hall

1200 Buses begin to NPS

1300 Bioeffects Research and Implications to High-Energy Laser Weapons Development

Threat Description

1330 Chemical Munitions Keepout Analysis

1400 UAV / UAS Threat Paper
NASIC

1430 Break

Subsystem Test Results

1500 The Effects of High Energy Laser Against Selected Ground Ordnance

1530 HEL Side Engagement Testing of MANPADS Missile Motor and Warhead

1600 HEL Engagement Testing of an Improvised Explosive Device (IED)

Material Interaction

1630 An Intuitive Derivation of Analytical Solutions for the Laser Heating of Materials

1700 A Novel Method for Non-Contact Full Field Strain Measurements Under Laser Irradiation

1745 Last bus leaves NPS

WEDNESDAY MORNING

BEAM CONTROL

Test Results (SECRET)

NPS, King Hall

- 0700 Registration and Breakfast at Marriott
Buses begin to NPS
- 0800 Foreign Laser Anti-Satellite Threats
and Programs
- 0830 ATL Low Power Flight Test Results
- 0900 Low Power Flight Tests Demonstrate
ABL's Wavefront Control Capabilities
- 0930 ABL BCFC Active Tracking
- 1000 Break
- 1030 ABL BCFC Jitter Control Test Status
- 1100 ABL BCFC Passive Tracking
- 1130 ABL BCFC Active Ranging Test Status
- 1200 Lunch at NPS only

WEDNESDAY MORNING

EFFECTS MITIGATION

DE Effects Mitigation (SECRET)

NPS, ME Auditorium

- 0700 Registration and Breakfast at Marriott
Buses begin to NPS
- 0800 Deep Turbulence Effects Compensation:
Analysis and Experimental
Demonstration of a Cascaded Adaptive
Optics System Using AMOS 3.6 m
Telescope
- 0830 Aircraft Hardening Demonstration
- 0900 Narrowband and Ultra-Wideband
Microwave Effect Results on the
Tactical Automated Security System
- 0930 Way Ahead for DEW Safety
- 1000 Break
- 1030 Decision Support Tool for Directed
Energy Weapons
- 1100 Understanding Compound Effects:
Concept for an Integrated Tool Set to
Predict Composite Radio Frequency
Bioeffects in Complex Environments
- 1130 Proteomic Analysis of Plasma from Rats
Exposed to 94 GHz Millimeter Waves
- 1200 Lunch at NPS only

WEDNESDAY MORNING

DE MODELING & SIMULATION

HEL Device (FOUO)

Marriott Hotel, San Carlos III

Chair: *Justin Mansell*, MZA Associates

- 0700 **Registration and Breakfast at Marriott**
- 0800 **Nonlinear Simulations of Free-Electron Laser Oscillators**
Henry Freund, Science Applications International Corporation
- 0830 **Start-to-End Analysis of High Power Free Electron Laser Amplifiers**
J. Blau, Naval Postgraduate School
- 0900 **Free Electron Laser Performance with Quadrupole Magnet Misalignment from Shipboard Vibrations**
J. Blau, Naval Postgraduate School
- 0930 **Laser Beam Diagnostic Sensors Modeled in WaveTrain**
Brian Henderson, MZA Associates
- 1000 **Break**
- 1030 **Technique for Modeling Multi-Mode Stable Resonator Laser using Multiple Iteration Averaging of the Intensity Profile**
Justin Mansell, MZA Associates
- 1100 **Simulation of Thin-Disk Yb:YAG Lasers with Stable Resonators and with One or Two Transverse Modes**
Alan Paxton, Air Force Research Laboratory/RDL
- 1200 **Lunch at NPS only**

WEDNESDAY MORNING

EMPLOYMENT OF DE WEAPONS

How DE Changes the Battlespace (SECRET)

NPS, Ingersoll Hall

- 0700 Registration and Breakfast at Marriott
Buses begin to NPS
- 0810 What Happened in recent Iranian Boat
Incident(Film and Discussion)
- 0900 USN - ADS Concept
- 0920 Panel discussion: FO/GO Observations
- 1000 Break
- 1030 Defensive SUW Capabilities, Limitations
and Requirements Brief

- 1100 Open Discussion: How can the S&T
community expedite the fielding of DE
Systems, and how can the warfighter
become involved with the S&T
Community - the benefit
- 1200 Lunch at NPS only

WEDNESDAY MORNING

HEL LETHALITY

Material Interaction (SECRET)

NPS, Glasgow Hall

- 0700 Registration and Breakfast at Marriott
Buses begin to NPS
- 0800 Airflow Effects on HEL Irradiation of
Painted Targets
- 0830 Application of an Array of Multiple Fiber
Lasers to Material Damage Studies
- 0900 Analysis of 1 μm Laser Interaction with
Retro-Engineered UAV Materials
- 0930 LEWAT-EF: A Comprehensive Laser
Target Vulnerability Code
- 1000 Break
- 1030 Damage Criteria of Electronic and
Electrical Components to a High
Energy Fiber Laser
- 1100 Data Summary Activity in Recent Years
- 1130 Data Summary: High Energy Laser
Lethality Testing on Titanium and
Magnesium
- 1200 Lunch at NPS only

WEDNESDAY AFTERNOON

JOINT SESSION

Symposium Joint Session (FOUO)

NPS, King Hall

Chair: *Stanley Gorenc*, Raytheon

- 1200 **Buses begin to NPS**
- 1330 **Opening Remarks**
Stanley Gorenc, Raytheon
- 1340 **DE to the Warfighter**
William Decker, Defense Acquisition University
- 1410 **Counter MANPADS Test Results with Laser**
Chad Smith, General Dynamics
- 1430 **Modeling High Energy Laser Collateral Effects and the Laser Range Safety Tool (LRST)**
Robert Thomas, Air Force Research Laboratory
- 1450 **Tactical Relay Mirror System (TRMS)**
Jeff Malanify, Boeing - SVS
- 1510 **Break**
- 1530 **The USAF Bomber Defense Program**
Ed Duff, Air Force Research Laboratory
- 1550 **Multi-kW Fiber Laser Lethality Testing Against Missiles**
Jerry Manke, Naval Surface Warfare Center
- 1610 **RF/HPM Effects Test Procedures and Results for a Military Fly-By-Wire Aircraft**
Douglas Byrne, ITT
- 1630 **Integration of Electrical Lasers Into Ships**
Joseph Shwartz, Northrop Grumman
- 1650 **Active Denial System**
Diana Loree, Air Force Research Laboratory
- 1730 **Last bus leaves NPS**
- 1915 **Buses begin to Aquarium**
- 1930 **Strolling Dinner at the Aquarium**

Agenda Subject to Change

Visit www.deps.org for Daily Updates

	Tues AM	Tues PM	Wed AM	W P
King Hall	Opening Plenary		BEAM CONTROL	JO SES
Glasgow Hall		LETHAL- ITY	LETHAL- ITY	
ME Auditorium		M&S	EFFECTS MITIGA- TION	
Ingersoll Hall		EMPLOY- MENT	EMPLOY- MENT	
Spanagel				
Convention Center				
San Carlos II				
San Carlos III		BEAM CONTROL	M&S	

Ved PM	Thurs AM	Thurs PM	Fri AM	Fri PM
JOINT SESSION			HEL JOINT	Closing Plenary
	LETHAL- ITY	LETHAL- ITY		
	M&S	M&S	HPM	
	EFFECTS MITIGA- TION	EMPLOY- MENT		
	HPM			
	EMPLOY- MENT			
	BEAM CONTROL	BEAM CONTROL		
	BEAM CONTROL			

THURSDAY MORNING

BEAM CONTROL

Aero Optics (FOUO)

Marriott Hotel, San Carlos III

Chair: *Brij Agrawal*, Naval Postgraduate School

- 0700 **Registration and Breakfast at Marriott**
- 0800 **Computing Independent x-tilt and y-tilt Jitter Estimates From Signal Returns**
Rao Gudimetla, Air Force Research Laboratory
- 0825 **Development of Error Signal for use in Adaptive Algorithms for the Control of Platform Induced Jitter in Directed Energy Systems**
R.J. Watkins, U.S. Naval Academy
- 0850 **Laser Beam Jitter Control Using Adaptive Filtering Techniques**
Hyunjoo Yoon, Naval Postgraduate School
- 0915 **Investigation of the Atmospheric Power Spectral Density at Finite Outer Scales and High Greenwood Frequencies**
Darryl Sanchez, Air Force Research Laboratory
- 0940 **Up-Link Propagation Statistics: Very Rapid Generation of Monte Carlo Results Using Rytov Propagation**
Dave Fried, Private Consultant
- 1000 **Break**
- 1030 **Aerodynamic Fairing Design for Flow Control Around Turret Beam Director on Aircraft**
David Yeh, Boeing-Phantom Works
- 1100 **An Acoustically Regularized Shear Layer for Feed-Forward Adaptive-Optic Correction**
D.J. Wittich, University of Notre Dame
- 1130 **Numerical Investigation of a Two-Dimensional Compressible Shear Layer and Comparison to Weakly Compressible Discrete Vortex Model**
Eric Jumper, University of Notre Dame
- 1200 **Lunch at Marriott or NPS**

THURSDAY MORNING

BEAM CONTROL

Hardware (FOUO)

Marriott Hotel, San Carlos II

Chair: *Walt Fink*, High Energy Laser Joint
Technology Office

- 0700 **Registration and Breakfast at Marriott**
- 0800 **A Real-Time Controller for the Multi-Conjugate Adaptive Optics System on Gemini South**
Steve Browne, tOSC
- 0825 **The Optical-Mechanical Wavefront Sensor Design and Anticipated Performance for the Multi-Conjugate Adaptive Optics System on Gemini South**
Rob Dueck, tOSC
- 0850 **Application of Network Control Systems for Adaptive Optics**
Rob Eager, Boeing-LTS
- 0915 **ABL Fast Steering Mirror Prototype Integration & Testing**
Felix Morgan, Applied Technology Associates
- 0940 **High Energy Variable Focus Mirror**
Steven Griffin, Boeing-SVS
- 1000 **Break**
- 1030 **Improved Performance of a Tactical Inertial Reference Unit**
Vic Beazel, Air Force Research Laboratory
- 1100 **Athermal Window Glass by Design**
William Goodman, SAIC
- 1130 **Spinel as a High Energy Laser Exit Window**
Ishwar Aggarwal, Naval Research Laboratory
- 1200 **Lunch at Marriott or NPS**

THURSDAY MORNING

EFFECTS MITIGATION

DE Effects Mitigation (SECRET)

NPS, Ingersoll Hall

- 0700 Registration and Breakfast at Marriott
Buses begin to NPS
- 0800 Slot Aperture Coupling into Canonical
Cavities
- 0830 A Hybrid Time-domain Approach for
Predicting the Impact of High Power
Microwave Sources on Enclosures,
Cables, and Circuits
- 0900 Area Security Asset Protection
- 0930 Bioeffects and Predicted System
Effectiveness for Extremely Large Spots
- 1000 Break
- 1030 DE Effects Mitigation: The Role of
Safety Standards
- 1100 Potential Mitigation of Non-lethal IR
Laser Bioeffects
- 1200 Lunch at Marriott or NPS

THURSDAY MORNING

DE MODELING & SIMULATION

DE Systems (SECRET)

NPS, ME Auditorium

- 0700 Registration and Breakfast at Marriott
Buses begin to NPS
- 0800 Model-Based Design and Development
for Directed Energy Weapon Systems
- 0830 Boost Tier Defense Performance
Assessment
- 0900 An Approach to Integrating DE Options
into Diplomatic, Informational, Military,
and Economic (DIME) Effects Modeling
- 0930 Modeling and Simulation for Technology
Transition of a HEL to the B-1 Bomber
- 1000 Break
- 1030 Thermal Model for a 100 kW HEL
- 1100 Modeling High-Rate Lithium-Ion
Batteries for Laser Applications
- 1130 Electrical Power Model for a Tactical
HEL System
- 1200 Lunch at NPS or Marriott

THURSDAY MORNING

EMPLOYMENT OF DE WEAPONS

Systems Applications (FOUO)

Monterey Convention Center

Chairs: *Kathleen Van Norman*, Raytheon, and
Mark Gage, Whitney, Bradley & Brown
Inc.

- 0700 **Registration and Breakfast at Marriott**
Buses begin to NPS
- 0815 **DETEC: Tri-Service Study Update**
Bob Lee, Science Applications
International Corporation
- 0900 **Employment of Ultrashort Pulse**
Directed Energy
Richard Fork, University of Alabama
- 1000 **Break**
- 1030 **Beam Quality Versus Laser Power**
Analysis of a High Energy Laser Weapon
System
Mallory Chritton and *Edwin Pope*, U.S.
Military Academy
- 1115 **Systems-Focused Analysis of High**
Energy Laser Systems in a Tactical
Environment
Andrew Freeman, U.S. Military Academy
- 1200 **Lunch at NPS or Marriott**

THURSDAY MORNING

HEL LETHALITY

System Modeling and Analysis (SECRET) NPS, Glasgow Hall

- 0700 Registration and Breakfast at Marriott
Buses begin to NPS
- 0800 High Fidelity Modeling of Laser-Target
Interactions using Real Beam Profiles
- 0830 Modeling of Laser Induced Metal
Combustion
- 0900 Simulated HEL Side Engagement
Testing of a MANPADS Missile
- 0930 Numerical Analysis of a Metal-Solid
Rocket Subjected to Laser Irradiation
- 1000 Break

EO/IR Sensor Susceptibility

- 1030 Air Force Research Laboratory
Electro-optic/Infrared Countermeasures
Programs
- 1100 Boresight Laser Damage Testing of
MANPADS Missile
- 1130 Response of Germanium Windows
Irradiated by Quasi CW 1.064 μm Laser
- 1200 Lunch at NPS or Marriott

THURSDAY MORNING

HPM SYSTEMS

Counter Electronics (SECRET)

NPS, Spanagel Hall

- 0700 Registration and Breakfast at Marriott
Buses begin to NPS
- 0800 Introduction/Admin/Security
Session Chairs and Staff
- 0810 HPM at the DOE National Laboratories
- 0850 A Repetitive, Frequency Agile,
High-Power RF System
- 0930 Development of a Unique High Power
Wideband RF System
- 1010 Break
- 1030 Integration of an HPM Source into the
MEGA (Microwave Electronic Ground
Attack) Combat Vehicle
- 1050 US Air Force HPM Counter-Electronics
System Development Plans
- 1110 Predicting Time Out of Action for a High
Power Microwave Counter Electronics
Attack
- 1130 An Approach to Integrating Directed
Energy Options into DIME Effects
Modeling
- 1200 Lunch at NPS or Marriot

THURSDAY AFTERNOON

BEAM CONTROL

Tracking and Stabilization (FOUO)

Marriott Hotel, San Carlos II

Chair: *Paul Berger*, MIT/Lincoln Laboratory

- 1300 **Three-Dimensional Tracking Algorithm Performance**
Don Link, MZA Associates
- 1330 **Avalanche Photo-Diode Arrays for Adaptive Optics**
Rob Johnson, Air Force Research Laboratory
- 1400 **High Bandwidth Controls Simulations of SOR Active Tracking**
Robin Ritter, Tau Technologies
- 1430 **Break**
- 1500 **Small Optical Inertial Reference Units for Long Range Optical Communication**
Henry Sebesta, Applied Technology Associates
- 1525 **Hit Spot Tracking Assessment**
Chuck LaMar, Space and Missile Defense Command
- 1550 **Optimized Tactical HEL Architecture (OTHELO)**
Don Washburn, MZA Associates
- 1615 **Analog Beam Control System for Fast Wavefront Correction**
Dennis Mansell, AgilOptics
- 1640 **Advanced Optical Inertial Reference Units for Stabilization of Precision Optical Transmitters and Receivers**
Henry Sebesta, Applied Technology Associates
- 1745 **Last bus leaves NPS**

THURSDAY AFTERNOON

DE MODELING & SIMULATION

HEL Engagement (SECRET)

NPS, ME Auditorium

- 1300 An Incremental and Synergistic Approach to Modeling Effects in Air Combat
- 1330 Tactical HEL Utility Study
- 1400 High Power Laser Beam Propagation in a Maritime Environment
- 1430 Break
- 1500 Comparison of HEL Effective Range and Target Tracking as a Function of Aperture Diameter Over Diverse Low Altitude Tactical Scenario
- 1530 Edge Detection and Pose Estimation for Active and Passive Imagery
- 1600 Comparison of Peak Irradiance and Power-In-the-Bucket Predictions Among Several Performance Models and Wave Optics Codes Over Diverse Low Altitude Operating Regimes
- 1630 Radiometric Calculations with Wave Optic Simulations
- 1745 Last bus leaves NPS

THURSDAY AFTERNOON

EMPLOYMENT OF DE WEAPONS

Systems Applications (SECRET)

NPS, Ingersoll Hall

- 1300 Navy Laser Weapons Systems Design
Reference Mission Design Analysis
- 1330 Crossing the Chasm: Applied Energetics'
Journey from Concept to Capability in
Deploying a Directed Energy System
- 1430 Break
- 1500 JIEDDO Overview and Defeat Strategies
- 1545 Wrap-up, Thank you and Adjourn
- 1745 Last bus leaves NPS

THURSDAY AFTERNOON

HEL LETHALITY

EO/IR Sensor Susceptibility (SECRET)

NPS, Glasgow Hall

- 1200 Buses begin to NPS
- 1300 Ultra Short Pulsed Laser IRCM Concepts and Testing
- 1330 Susceptibility of GaAs/Ge Solar Cell Array Panels to 1.07 Micron Laser Irradiation

Test Facilities, Instrumentation, Diagnostics and Techniques

- 1400 Development of an On-Board TISM for HEL Test and Evaluation
- 1430 Break
- 1500 HEL Airborne Target Irradiance and Imagery Measurements Risk Reduction Test-bed
- 1600 High Energy Laser Ground Target Irradiance Measurement Capability
- 1630 Bi-directional Reflectance Distribution Function Results From Outdoor HEL Testing
- 1700 Beam Characterization Measurement in the Field: Techniques and Results
- 1745 Last bus leaves NPS

FRIDAY MORNING

HEL JOINT SESSION

HEL Session (SECRET)

NPS, King Hall

- 0700 Registration and Breakfast at Marriott
- 0715 Buses begin to NPS
- 0800 Introduction

- 0810 Tri-Service Study Update Project -
Project Overview

- 0835 Laser Interaction with Ordnance
Modeling

- 0900 The Time Evolution of a Painted Surface
Absorptivity During HEL Illumination

- 0925 Controlling Beam Distortions in High
Average Power Solid-State Lasers

- 0950 Break
- 1020 Employment of a Directed Energy
Weapon on the B-1 Bomber

- 1045 Laser Coupling at 1.07 μm - An Update

- 1110 A Methodology for Calculating the
Response of High Explosive (HE)
Components Due to High-Energy Laser
(HEL) Irradiance in the Effectiveness
ToolBox (ETB)

- 1135 Vulnerability Analysis of an Unmanned
Aerial Vehicle to High Energy Laser
Weapons

- 1200 Lunch at NPS only

FRIDAY MORNING

HPM SYSTEMS

Non Lethal, Counter-IED (SECRET)

NPS, ME Auditorium

- 0700 Registration and Breakfast at Marriott
- 0715 Buses begin to NPS
- 0800 Introduction/Admin/Security
Session Chairs and Staff
- 0810 Development of the Silent Guardian and
Vigilant Eagle Directed Energy Weapon
Systems
- 0850 Investigation of Non-Lethal High Power
Microwave Weapons as a Force
Protection Option in Support of Joint
Urban Operations
- 0910 HPM at Sea
- 0930 Marine Engine Susceptibility Testing and
System Development
- 0950 Break
- 1000 System Integration of DETEC NBTS
- 1020 DETEC NBTS A and A-Prime
- 1040 Design of the NBTS-B HPM Threat
Simulator
- 1100 Corrugated Pyramidal Horn Design for
NBTS
- 1120 Mesoband HPM System (RAPTR)
- 1140 IMP (Intense ElectroMagnetic Pulse)
- 1200 Lunch at NPS ONLY

FRIDAY AFTERNOON

PLENARY SESSION

Closing Plenary Session (SECRET)

NPS, King Hall

- 1200 Buses begin to NPS
- 1300 Call to Order

- 1305 Symposium Summary

- 1330 Lethality Highlights

- 1350 Modeling & Simulation Highlights

- 1410 Beam Control Highlights

- 1430 HPM Systems & Effects Highlights

- 1450 Employment of DE Weapons Highlights

- 1510 DE Effects Mitigation Highlights

- 1520 DE Effects Mitigation Highlights

- 1530 Symposium Adjourns
- 1545 Last bus leaves NPS

-

Symposium Organizers

Symposium Co-chairmen:

J. Thomas Schriempf

Stanley Gorenc

Symposium Program Coordinator

David Loomis

Conference Chairmen:

Lawrence Grimes, Beam Control

Stephanie Miller, Effects Mitigation

David Schafer, Effects Mitigation

Douglas Rigdon, M&S

David Kiel, Employment

Chuck LaMar, Lethality

Kirk Hackett, HPM

Symposium Coordinator:

Cynnamon Spain

Registration / Short Courses:

Donna Storment

Directed Energy Professional Society

2600 Yale Blvd SE, Suite 139

Albuquerque, NM 87106

Tel: 505-998-4910

Fax: 505-998-4917

www.deps.org