

ITBMS 2016

27 - 30 June 2016 - Carcassonne, France



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ONERA
THE FRENCH AEROSPACE LAB

Fraunhofer



The 11th International IR Target and Background Modeling & Simulation Workshop is open to people from the defense research and development community active in the field of optical signature simulation technologies, to military users and to industry representatives.

General Workshop Objectives

Provide a European scientific forum for the IR modeling and simulation community to discuss current developments in their field of expertise
Foster an intensive exchange of ideas and results in IR modeling and simulation and help building up and maintain the information network in the community
Encourage cooperation between groups actively engaged in this field

Topical Session Objectives

Provide an opportunity for the software end-users to learn about the latest developments.
Offer the opportunity to demonstrate and discuss the latest features in software products

TOPICS

All sessions of the workshop will be unclassified. Contributions are solicited in subjects ranging from basic signature research to applications in system design, optimization and evaluation

- Data, techniques, models, and validation of IR signatures of land, sea and air targets and backgrounds, and of targets in backgrounds
- Extension to infrared polarization hyperspectral and active signatures
- Optical properties of complex surfaces
- Models validation and metrics
- IR signature management models
- Modeling and simulation of IR clutter (soil, maritime, atmospheric)
- Radiative transfer, propagation models and optical data sets
- Impact of climatic conditions on signatures
- Active / Laser imaging systems

SPONSORS

Davis

 **LACROIX**

 **OKTAL-SE**
Synthetic Environment

 **ThermoAnalytics**

INTERNATIONAL PROGRAM COMMITTEE

Al Curran	ThermoAnalytics Inc.	USA
Latger Jean	OKTAL-SE	France
Repasi Endre	Fraunhofer-IOSB	Germany
Riviere Nicolas	ONERA	France
Rosier Bernard	ONERA	France
Vaitekunas David	W.R. Davis Engineering Ltd.	Canada

Organizing Committee ITBMS 2016: ONERA Toulouse
Contact: itbms@onera.fr

VENUE

ITBMS 2016 will take place at Château de Pennautier, 5km from Carcassonne, France.



Toulouse-Blagnac Airport (90km to Carcassonne)

International flights: www.toulouse.aeroport.fr/en

Carcassonne Airport for flights operated by Ryanair

www.aeroport-carcassonne.com

www.ryanair.com

Accommodation

More information on www.tourism-carcassonne.co.uk/prepare/where-stay/hotels

PROGRAM

DAY 1 – Monday, June 27	
09:30 – 10:00	Registration
10:00 – 10:15	Welcome address and workshop organization Nicolas Riviere
SESSION 1 10:20 – 12:30	System performances Chair: Bernard Rosier
	An approach of validating for using the NV-IPM software in the I2 domain for the DGA missions G. Swiathy, J.P. Durand, M. Le Port, M.A. Guesnier, T. Vallas
	The European Computer Model for Optronic System Performance Prediction (ECOMOS) Overview and State of Work E. Repasi, P. Bijl, L. Labarre, W. Wittenstein, H. Buersing
	Performance Assessment of Electro-optical Systems with TRM4v2 – Status and Future S. Kessler, J. Mündel
	Proposing some mathematical artefacts, helping MWIR cameras to detect objects which mostly emit in the LWIR wavelengths M. Brun
	The “Neon” Tactical Decision Aid Programme W. Lewis, C. Chapple, D. Wilson
12:30 – 14:00	Lunch
SESSION 2 14:00 – 15:00	Target Chair: David A. Vaitekunas
	800 nm - 4100 nm Mid-Infrared Supercontinuum Laser Sources for Application in Spectroscopy F. Gaudfrin, G. Huss, R. Ceolato, S. Poulain, N. Riviere
	Towards Broadband Near and Mid-Infrared Signatures Measurements from New Supercontinuum Laser Sources R. Ceolato, C. Martin, N. Riviere
15:00 – 15:30	Coffee Break
SESSION 3 15:30 – 17:00	Target Chair: Al Curran
	Modeling and simulation of wet painted surfaces M. Beecroft, R. Ben-Dov, J. Jafolla, A.B. Lessin, B. Milgrom, A. Reinov, D. Steiner
	Prediction of surface temperatures of large-vehicle targets W. Lewis, H. Rance, R. King, D. Bentley, D. Wilson
	Shock wave detection and reconstruction with BOS technique D. Donjat, F. Nicolas, G. Le Besnerais, A. Plyer, F. Micheli, F. Champagnat
17:00	End of the day

DAY 2 – Tuesday, June 28

SESSION 4 09:00 – 10:20	Validation and IR applications Chair: Nicolas Riviere
	Trapped Victim Detection using a Miniaturized LWIR Camera P. Agrafiotis, A. Doulamis, G. Athanasiou, A. Amditis
	Synthetic IR images from a geostationary satellite T. Cathala, N. Moreau
	Towards the numerical transition of ecological engineering S. Moulherat, O. Fauvelet
	Topological and thermographic data acquisitions by drone O. Anquetin
10:20 – 11:00	Coffee Break and Drone Demonstration
SESSION 5 11:00 – 12:00	Real time imaging simulation techniques Chair: Alain Le Goff
	GPU Based Infrared Signature Modeling and Scene Simulation Ç. Kavak, G. Bozdağı Akar
	New features of SE-Workbench EO rendering T. Cathala, J. Latger
12:00 – 13:30	Lunch
SESSION 6 13:30 – 14:50	Imaging simulation techniques Chair: Romain Ceolato
	MATISSE V3 – Overview and future developments L. Labarre, L. Croizé, S. Fauqueux, T. Huet, C. Malherbe, J. Pierro
	Infrared real time globe viewing J. Latger, T. Cathala
	Acceleration of ray tracing technique using CUDA J. Latger, T. Cathala
14:50 – 15:10	Coffee Break
SESSION 7 15:10 – 16:00	Thermal modeling and data Chair: Jean Latger
	Collection of physical material databases for the SE-Workbench-EO A. Le Goff
	Thermal and Infrared Simulation of Camouflaged Human Dismounts C.D. Packard, M.D. Klein, T.S. Viola, M.A. Hepokoski
16:00	End of the day
17:00 – 23:30	Social Event

DAY 3 – Wednesday, June 29

SESSION 8 09:00 – 10:50	Thermal modeling and data Chair: Nicolas Riviere
	Davis Engineering: Corporate presentation D.A. Vaitekunas
	ThermoAnalytics: Corporate presentation A. Curran, F. Godillon
	Alteration of thermal signatures using heat pipes M. Winkelmann
10:00 – 10:20	Coffee Break
	Lacroix: Corporate presentation A. de Lataillade
	Oktal-SE: Corporate presentation J. Latger
SESSION 9 10:50 – 12:00	Maritime objects and background Chair: Endre Repasi
	Simulation of Whitecaps and their Radiometric Properties in the SWIR F. Schwenger, E. Repasi
	3D Flare Particle Model for ShipIR/NTCS S. Ramaswamy, D.A. Vaitekunas
	Comparison of 3D Flare Particle Model with Actual Measurements D.A. Vaitekunas, S. Ramaswamy, W. Gunter, F. February
12:00 – 13:30	Lunch
SESSION 10 13:30 – 15:00	Active imaging and Laser Chair: Warren Lewis
	Laser imaging techniques to improve the vision for situational awareness N. Riviere, A. Coyac, P.E. Dupouy, R. Ceolato, L. Hespel
	Geiger-mode avalanche photodiode for airborne 3D mapping A. Coyac, N. Riviere
	ALARMS: innovAtive Laser imAging technologies with extended Range for Maritime Surveillance L. Hespel, E. Nacimben, D. Gorce, M. Bremaut, Ph. Barillot, S. Fauqueux, M. Fraces, A. Plyer, N. Riviere
	OEM Fiber Laser Rangefinder for long-distance measurement N. Picard
15:00 – 15:30	Coffee Break
SESSION 11 15:30 – 16:50	Impact of climatic conditions on signatures Chair: Laurent Hespel
	Aerosol impacts on contrast A.M.J. van Eijk, J. Piazzola, G. Tedeschi, K. Stein
	3D Cloud investigation and radiance calculation for background modeling C. Bellisario, C. Malherbe, F. Sczcap
	Solar loading and Wind effects on Infrared Signatures in False Bay F. February, W. Gunter
17:00	End of the day

DAY 4 – Thursday, June 30

SESSION 12	Training sessions		
09:30 – 11:00	OKTAL-SE	ThermoAnalytics	Davis Engineering
11:00 – 11:20	Coffee Break		
11:20 – 12:30	OKTAL-SE	ThermoAnalytics	Davis Engineering
12:30 – 14:00	Lunch		

