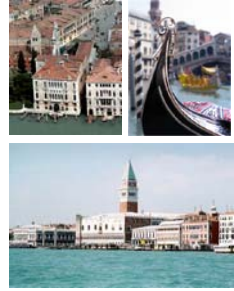




57th Meeting of the Aeroballistic Range Association

Palazzo Franchetti, Venice, Italy
18-22 September 2006



Monday, 18 September

- 9.00 – 10.30 Registration and Welcome Cocktail**
Palazzo Franchetti
- 10.30 - 10.40 Opening**
D. Baum, Chairman of the Aeroballistic Range Association
- 10.40 – 10.50 Welcome**
F. Angrilli, Director of CISAS
- 10.50 – 11.00 Welcome**
F. Manzolini, Councillor of the Province of Padova

Session A1 – Experimental results

Chairman: R. Putzar (EMI)

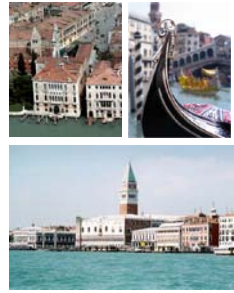
- 11.00 – 11.25 From solid spall in the vicinity of the melting curve to liquid microspall for tin: experimental challenges for modelling issues**
C. Voltz, F. Buy, L. Signor, F. Llorca, G. Roy (CEA)
T. De Resseguier, A. Dragon (ENSMA)
- 11.25 – 11.50 Water as means to arrest high velocity fragments**
A. Levy, A. Brill, A. Malka, R. Genussov (RAFAEL)
- 11.50 - 12.15 Dynamic Young Modulus determination using single fibre impact**
B.D. Here Utomo (TNO)
- 12.15 – 12.40 Experimental study of hypervelocity impact phenomena at low temperatures**
D. Numata, K. Takayama, M. Sun (ISWRL, Tohoku University)

Conference Program



57th Meeting of the Aeroballistic Range Association

Palazzo Franchetti, Venice, Italy
18-22 September 2006



12.40 – 14.15

Lunch

Session B1 – Accelerators/Facilities

Chairman: D. Pavarin (CISAS)

14.15 – 14.40

Neural network simulation on LGG test parameters

B. Lexow (EMI)

14.40 – 15.05

PYRENE: a new small launcher for dynamic material studies

P.L. Héreil, F. Sinatti, C. Chauvin, C. Loupias (CEG)

15.05 – 15.30

Large Scale Hypervelocity High-Fidelity Interceptor Lethality Development in AEDC's Range G

D. Carver, L. Campbell, R. Roebuck (AEDC)

15.30 – 16.00

Coffee Break

Session C1 -Instrumentation

Chairman: M. Rott (TUM)

16.00 – 16.25

Techniques for Surface Temperature Measurements and Transition Detection on Projectiles at Hypersonic Velocities - Status Report No. 2

D. W. Bogdanoff (ELORET) and M. C. Wilder (NASA AMES)

16.25 – 16.50

Making Measurements on Projectiles in Flight

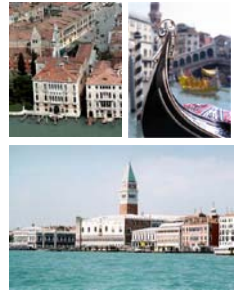
J. Trolinger, L. Yates, D. L'Esperance (METROLASER Inc.)

Conference Program



57th Meeting of the Aeroballistic Range Association

Palazzo Franchetti, Venice, Italy
18-22 September 2006



Tuesday, 19 September

Session C2 – Instrumentation

Chairman: D. W. Bogdanoff (ELORET)

- 9.00 – 9.25** **Impact flash spectroscopy at velocity approaching 20 km/s**
W. D. Reinhart (SANDIA)
- 9.25 – 9.50** **A soft recovery system coupled with advanced diagnostics**
J. Garner, B. Guidos, R. Phillabaum II, P. Muller (US Army Research Laboratory-Weapons and Materials Research Directorate) and E. Scheper (US Armaments Research Development and Engineering Center)
- 9.50 – 10.15** **Metrological characterization of an instrument for the measurement of micro-particles momentum**
S. Rocca and F. Angrilli
- 10.15 – 10.45** **Coffee Break**

Session A2 – Experimental results

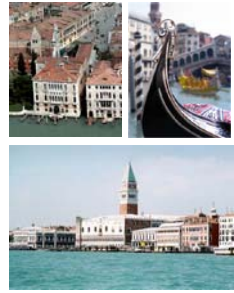
Chairman: K. Takayama (Tohoku University)

- 10.45 – 11.10** **HVI on CFRP plates**
A. Francesconi, D. Pavarin, C. Giacomuzzo (CISAS), S. Kibe (JAXA) and F. Angrilli (CISAS)
- 11.10 – 11.35** **Passive Measurement Of Dust Particles On The ISS (MPAC): Third Report On Aerogel Dust Collectors**
Y. Kitazawa (IHI, JAXA-ISAS, JAXA-IAT), M. J. Neish (AES), T. Noguchi (Ibaraki University), I. Yamagata, Y. Kimoto, J. Ishizawa (JAXA-IAT), A. Fujiwara (JAXA-ISAS), M. Suzuki (JAXA-IAT), Y. Yamaura, Y. Watanabe and S. Yamane (IA)



57th Meeting of the Aeroballistic Range Association

Palazzo Franchetti, Venice, Italy
18-22 September 2006



11.35 – 12.00 **Impact testing of Orbiter Thermal Protection System Materials**
J. Kerr (NASA JSC)

12.00 - 12.25 **Evaluation of methods in order to determine V50**
M. Maldague (Royal Military Academy, Belgium)

12.25 – 14.00 **Lunch**

Session E – Exhibitors' presentations

Chairman: A. Francesconi (CISAS)

14.00 – 14.30 **DRS Data and Imaging Systems**
B. Speyer

14.30 – 15.00 **Thiot Ingenierie**
P. Thiot, J. Mespoulet

15.00 – 15.30 **Coffee Break**

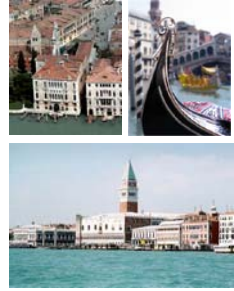
15.30 - 16.00 **Specialised Imaging Ltd**
A. Chines, D. Squires, P. Berkenberg

16.00 – 16.30 **MF-Instruments**
B. Buk



57th Meeting of the Aeroballistic Range Association

Palazzo Franchetti, Venice, Italy
18-22 September 2006



Wednesday, 20 September

Conference Tour

The Conference Tour will visit Padova, about 30 km west from Venice. In the morning, conference participants will stop at the CISAS Hypervelocity Impact Facility, which is placed close to Padova's downtown.

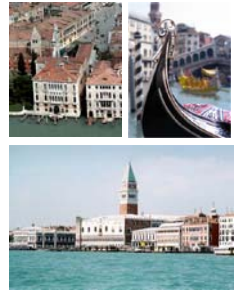
Conference attendees will join companions for the launch and the afternoon visit of the downtown.

- | | |
|----------------------|---|
| 9.45 | Meeting point: Piazzale Roma
Bus departure to Padova @10.00 |
| 10.45-12.15 | Visit to the CISAS Hypervelocity Impact Facility |
| 12.30 – 14.30 | Lunch |
| 14.30 – 16.00 | Visit to the downtown |
| 16.00 | Return to Venice |



57th Meeting of the Aeroballistic Range Association

Palazzo Franchetti, Venice, Italy
18-22 September 2006



Thursday, 21 September

Session D – Experimental/Numerical results

Chairman: J. Kerr (NASA JSC)

- 9.00 – 9.25** **Spacecraft disturbances due to hypervelocity impacts**
D. Pavarin, A. Francesconi, A. Bettella, C. Giacomuzzo, S. Debei, G. Parzianello, M. De Cecco (CISAS), M. Faraud, R. Destefanis, P.C. Marucchi-Chierro, R.Ullio (ALCATEL Alenia Space), M. Lambert (ESA ESTEC), B.Saggin (POLIMI) and F. Angrilli (CISAS)
- 9.25 – 9.50** **Hypervelocity impacts on thin brittle targets: experimental data and associated SPH simulations**
Y. Michel, J-M. Chevalier, C. Durin, C. Espinosa, F. Malaise, J-J. Barrau (CEA)
- 9.50 – 10.15** **Analysis of a landmine explosion under an armoured vehicle by numerical simulation**
D.A. Cendón, F. Gálvez, A. Enfedaque and V. Sánchez-Galvez (Polytechnic University of Madrid)

10.15 – 10.45 **Coffee Break**

Session B2 – Accelerators/Facilities

Chairman: L. Campbell (AEDC)

- 10.45 – 11.05** **Generalizing the constant-base-pressure solution to optimize the performance of two-stage LGGs**
A. Francesconi, D. Pavarin, A. Bettella, L. Anali and F. Angrilli (CISAS)
- 11.05 – 11.25** **NSWCIH 40mm, High Velocity, Powder Gun Design Project**
J.G. Rogerson, A. Zakraysek, G. Sutherland, J. Barnes, T. Cloutier (NSWCIHDIV)

Conference Program



57th Meeting of the Aeroballistic Range Association

Palazzo Franchetti, Venice, Italy
18-22 September 2006



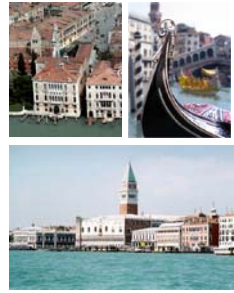
- 11.25 – 11.45** **Active piston technique to optimize the chamber pressure in two-stage LGG**
D.Pavarin, A. Francesconi, F.Niero and F.Angrilli (CISAS)
- 11.45 – 12.05** **New member paper: Open University HVI laboratory**
E. A. Taylor et al. (OU)
- 12.05 – 12.25** **155 mm gun capabilities at Lawrence Livermore National Laboratory**
K. S. Vandersall, L. L. Switzer, S. K. Chidester and F. Garcia (LLNL)
- 12.25 – 14.00** **Lunch**
- 14.00 – 15.00** **Special talk: Perspectives on the ARA**
D. Baum, Chairman of the Aeroballistic Range Association
- 15.00 – 15.30** **Coffee Break**
- 15.30 – 17.00** **Business Meeting**
- 19.30 – 20.30** **Evening visit to the Basilica of S. Marco**
Meeting point: Palazzo Franchetti @18.30
- 20.30 – 23.00** **Conference Banquet at the "Antico Martini"**

Conference Program



57th Meeting of the Aeroballistic Range Association

Palazzo Franchetti, Venice, Italy
18-22 September 2006



Friday, 22 September

Session B3 – Accelerators/Facilities

Chairman: C. Loupiaz (CEG)

- 9.00 – 9.25** **One-Dimensional Numerical Modeling of EMI's 4 mm Light Gas Gun**
G. Spencer, F. Schaefer, A. Klomfass, R. Putzar (EMI)
- 9.25 – 9.50** **Experimental Measurement of Diaphragm Deformation and Bursting in a Two-Stage Light Gas Gun**
R. Putzar, G. Spencer, F. Schäfer (EMI)
- 9.50 – 10.15** **Generation of Nano-Particles with the Help of High Velocity Plasma Pulses**
M. Rott, C. Artelt, T. Höschel (TUM)
- 10.15 – 10.45** **Coffee Break**

Session F – Aeroballistic

Chairman: E. van Riet (TNO)

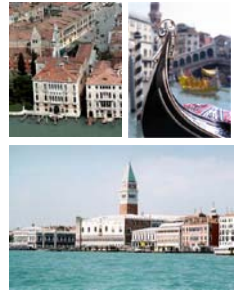
- 10.45 – 11.10** **Application of ballistic coefficient prediction methods for small arms**
S. Atac (TUBITAK-SAGE)
- 11.10 – 11.35** **Calculating Aerodynamic Coefficients for a NASA Apollo Body Using Telemetry Data from Free Flight Range Testing**
B. M. Topper (DATA MATRIX SOLUTION Inc), T. Vong (US Army Research Laboratory)
- 11.35 – 12.00** **Performance prediction of a ramjet propelled vehicle**
E. Benini, A. Sonda, E. Sartori (CISAS)

Conference Program



57th Meeting of the Aeroballistic Range Association

Palazzo Franchetti, Venice, Italy
18-22 September 2006



12.00 – 12.25

Development of a micro launcher vehicle at Padua University

D. Pavarin, A. Francesconi, M. Zaccariotto, M. Antonello and F. Angrilli
(CISAS)

12.00 – 13.30

Lunch

End of the 57th ARA Meeting



Post-Congress Tour, Saturday 22 September

9.00

Meeting Point: Palazzo Franchetti

9.00 – 17.00

Post-Congress Tour

The Post-Congress Tour will visit some of the most beautiful islands of Laguna Veneta around Venice: Murano, Burano (where the lunch will be organized), San Francesco del Deserto and Torcello.

17.00

Return to Venice



ARA 2006 - Organization Committee

CISAS G. Colombo, University of Padova
Via Venezia 15, 35131 Padova (Italy)
<http://cisas.unipd.it>

Meeting Host

Prof. Francesco Angrilli, CISAS Director

Conference Chairmen

Dr. Alessandro Francesconi

Dr. Daniele Pavarin

Conference Program