

3rd International Symposium on Hypersonic Flight

Air Force Academy, Pozzuoli, Italy, May 30-31, 2019

AGENDA

Day 1

08.30-09.00 Registration/coffee

09.00-09.25 Welcome remarks

Pietro Finocchio, Gen.(ret) ItAF, Associazione Arma Aeronautica, CESMA Director

Giuseppe Cornacchia, Gen. (ret), Section Roma Due "L. Broglio", Vice President

Enrico Degni, Gen. ItAF, Air Force Academy, Commander

Maria Teresa Moccia Di Fraia, Representative of Mayor of Pozzuoli

Luigi Carrino, Campania Aerospace District, President

09.25-09.30 Opening remarks

Giuseppe Cornacchia, Gen. (ret), CESMA and Roma Due, Hypersonic Flight Coordinator

09.30-09.50 Key note address: **Gianni Candotti**, Gen SA SMD

09.50-10.10 Coffee break

10.10-11.30 Enabling Technologies: Aerodynamics and aerothermodynamics

Chair: **Gennaro Russo**, Campania Aerospace District (DAC)

Aerodynamic, Aerothermodynamic and Propulsive Characteristics of the STRATOFly Vehicle,
Marco Marini, Centro Italiano Ricerche Aerospaziali (CIRA)

Compliance of Modern Methods of Numerical Simulation of High-Speed Flows with Real Physical Phenomena. Validation of Numerical Methods, **Nina V. Voevodenko**, TsAGI (Russian Federation)

Enhanced Theoretical Models and Numerical Methods for Hypersonic Flows, **Giuseppe Pascazio**, Politecnico di Bari

Flight Dynamic Analysis of a Small Hypersonic Plane, **Francesco De Vivo**, Politecnico di Torino

11.30-14.50 Advanced propulsion systems, high-temperature materials, hot structures and thermal protection systems

Chair: **Daniele Bianchi**, University Sapienza, Roma

Combination of SHS and SPS Processing Routes to Obtain Advanced Ceramics and Related Characterization in Hyperthermal Environments, **Giacomo Cao**, University of Cagliari

12.30-14.00 Lunch

Hybrid rocket systems for advanced low-cost hypersonic flight test platforms,
Daniele Pavarin, University of Padua

Structural and Thermal Loads for Hypersonic HEXAFly-INT Vehicle, **Roberto Scigliano**, CIRA

*A Framework for the Aerodynamic and Thermal Design of Highly Integrated Hypersonic Propulsion Systems, **Michele Ferlauto**, Politecnico di Torino*

14.50-16.10 Overview of national, European and International programs
Chair: **Daniele Pavarin**, University of Padua

*Multidisciplinary Design and Flight Test of the HEXAFly-INT Experimental Flight Vehicle, **Sara Di Benedetto**, CIRA*

*Main Challenges and Goals of the H2020 STRATOFly Project, **Nicole Viola**, Politecnico di Torino*

*Hypersonic Bizjet: A Multi-mission Technology Demonstrator, **Gennaro Russo**, DAC*

16.10-16.30 Coffee break

16.30-18.00 National and international norms and regulations, applicable airspace control and management, ground facilities and test techniques
Chair: **Giuseppe Cornacchia**, Gen. ItAF(ret), Hypersonic Flight Coordinator, CESMA&Roma Due

*Suborbital Flights and Spaceports, **Fabio Monaci**, Maj. ItAF, RSV/GIAS*

*Potential Aeromedical Implications Associated to Hypersonic Flight, **Marco Lucertini**, Col. ItAF, RSV/RMAS*

18.00 **Closing of Day 1**

Day 2

08.30-09.00 Registration/coffee

09.00-09.45 National and international norms and regulations, applicable airspace control and management, ground facilities and test techniques (resume)
Chair: **Giuseppe Cornacchia**, Gen. ItAF(ret), Hypersonic Flight Coord., CESMA&Roma Due

*Italian Air Force, Space and Aerospace Approach, **Francesco Soldani**, LtC ItAF, Air Staff, General Office for Space*

*Overview of research activities on Hypersonic Vehicles at the Department of Engineering of the University of Campania "L. Vanvitelli", **Giuseppe Pezzella***

09.45-10.30 Overview of national, European and International programs (resume)
Chair: **Daniele Pavarin**, University of Padua

*The HyShot HyCAUSE and HIFIRE Flight Programs: From the Ground to Flight, **Allan Paull**, University of Queensland (Australia)*

*ESA's Flight Vehicles & Aerothermodynamics Engineering Section, Activities and an Overview of Hypersonic Projects and Technologies, **Jeroen Van den Eynde**, ESA/ESTEC*

10.30-10.45 Coffee break

10.45-11.45 National and international norms and regulations, applicable airspace control and management, ground facilities and test techniques (resume)
Chair: **Giuseppe Cornacchia**, Gen. ItAF(ret), Hypersonic Flight Coord., CESMA&Roma Due

The Foundations of the National Regulatory Framework for the Commercial Suborbital Transportation, Giovanni Di Antonio, ENAC

New Airspace Users: ATM Introductory Considerations, Bruno Racoli, ENAV

NearSpace Traffic Management – A Concept to Accommodate Hypersonic Flights, Sven Kaltenhauser, DLR (Germany)

11.45-12.45 Student Awards

Chair: **Franco Langella**, Gen. Insp. (ret), ItAF

STRATOFly Academy: Inspire Young Generations and Be Inspired by New Ideas, Marco Marini, Board member

High school student section, 1st classified

Il Volo Ipersonico, Carmine Coletta, Istituto Tecnico Industriale “A. Righi”, Napoli

University student section, 1st classified

Hypersonic Missiles: New Challenges to Global Security, Lorenzo Nardi, 2nd Lt., ItAF, Francesco Marco Riboli, 2nd Lt., ItAF, Italian Air Force Academy, Pozzuoli

12.30-14.00 Lunch

14.00-15.00 Round table: *Promoting synergies and cooperation: nationally, internationally*
Chair: **Gregory Alegi, journalist**

Marco Marini, Centro Italiano Ricerche Aerospaziali (CIRA)

Gennaro Russo, Campania Aerospace District (DAC)

Nina V. Voevodenko, Central Aerohydrodynamic Institute (TsAGI), Moscow (Russian Federation)

Allan Paull, University of Queensland (Australia)

Francesco Soldani, Ltc ItAF, Air Staff, General Office for Space

15.00-16.00 Round table: *Potential impact of the development of hypersonic vehicles and weapons on international security at the global as well as regional level*
Chair: **Vittorio Argento**, RAI journalist

Enzo Camporini, Gen. (ret), ItAF, former Chief of Defense Staff

Pasquale Preziosa, Gen. (ret), ItAF, former Chief of Air Staff

Matteo Frigoli, Independent Researcher

16.00-16.10 Closing remarks