

Program of the XXIII Conference of the Italian Association of  
Aeronautics and Astronautics - AIDAA 2015

**PROVISIONAL VERSION**

Politecnico di Torino and Oval Lingotto, Torino, Italy

16-19 November 2015

Chairman: Erasmo Carrera

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Emanuele Pensavalle, Aviospace  
Massimo Sorli, Politecnico di Torino  
Franco Tortarolo, Avio Aero

# Wednesday, 18 November 2015, Oval Lingotto

<b>Wednesday Morning / 18 November / Oval Lingotto</b>	
<b>0730 - 0815</b>	<b>Registration</b>
<b>Wednesday Morning / 18 November / Oval Lingotto</b>	
<b>0825 - 1055</b>	<b>Parallel Sessions</b>

<b>Wednesday Morning / 18 November / Oval Lingotto</b>					
<b>Session S8</b>		<b>Composites</b>			
0825	0850	0915	0940	1005	1030
Variable kinematics models for multilayered smart plates	Residual strength analysis of damaged composite stiffened panels	A generalized unified formulation for vibration analysis of prestressed laminated panels	A probabilistic approach for buckling analysis of sandwich composite cylindrical shells	Multi-scale analysis and optimisation of 3D orthogonal woven composite structures combining the response surface method and genetic algorithms	Advanced laminated composite applications for doubly-curved shell structural components with variable curvature
Alberto Milazzo, Calogero Orlando	Fulvio Romano, Francesco Di Caprio, Umberto Mercurio, Leonardo Lecce	Michele D'Ottavio, Olivier Polit	Michela Alfano, Chiara Bisagni	Xinwei Fu, Sergio Ricci, Chiara Bisagni	Francesco Tornabene, Nicholas Fantuzzi, Michele Bacciocchi

<b>Wednesday Morning / 18 November / Oval Lingotto</b>					
<b>Session S1</b>		<b>Aircraft Design</b>			
0825	0850	0915	0940	1005	1030
Load control and alleviation technology for application to future green regional aircraft	Preliminary design of an adaptive aileron for next generation regional aircraft*	Investigation on an anti-icing system based on piezoelectric technology	Wingbox weight estimation for metallic and composite manufacturing in a conceptual design phase	Guided procedure for the zonal safety analysis in aircraft preliminary design	Conceptual design of a VTOL spacecraft aimed at parabolic flights*
E. Baldassin, E. Capello, G.M. Carossa, E. Bocchio, N. Calvi	Gianluca Amendola, Ignazio Dimino, Francesco Amoroso, Rosario Pecora, Antonio Concilio	Salvatore Ameduri, Angela Brindisi, Monica Ciminello	G. Bindolino, G. L. Ghiringhelli, S. Ricci, M. Terraneo	Luca Boggero, Marco Fioriti, Sabrina Corpino	Roberta Fusaro, Nicole Viola, Francesco De Vita, Alberto Del Bianco, Francesco Santoro, Franco Fenoglio, Federico Massobrio

<b>Wednesday Morning / 18 November / Oval Lingotto</b>					
<b>Session MS5</b>		<b>SMAT - Sistema di monitoraggio avanzato del Territorio</b>			
0825	0850	0915	0940	1005	
The SMAT project: advanced environment monitoring system*	UAS autonomy for ATOL, automatic taxi and mission planning/replanning*	Sensors and payloads management*	SMAT supervision and coordination station	Airspace integration*	
Salvatore Farfaglia	Ilaria Sale, Luca Damilano	Pier Antonio Catella, Marco Maffei	Michele Martino, Filomena Solitro, Eugenio Topa, Alfredo Villa, Carlo Vizzi	Nicole Viola, Sara Cresto Aleina, Roberta Fusaro	

**Wednesday Morning / 18 November / Oval Lingotto**

**Session MS3**

**Technologies for Space Debris Capture and De-orbiting:  
the CADET project**

0825	0850	0915	0940	1005	1030
Aviospace's developments on active debris removal technologies and concepts	In-situ measurement of debris kinematics and inertial properties during active debris removal mission	Guidance strategies for the capture of space debris*	Space debris visual reconstruction for removal	Innovative solutions for space debris capture: role of materials friction coefficient	Development of a novel nanocomposite pressure sensor based on carbon nanotubes: material synthesis and read-out electronics integration*
Alessandro Chiesa, Giovanni Gambacciani, Franco Fossati, Emanuele Pensavalle	Gabriele Biondi, Alessandro Chiesa, Stefano Mauro, Tharek Mohtar, Stefano Pastorelli, Massimo Sorli	Fabrizio Stesina, Sabrina Corpino, Loris Franchi	Walter Allasia	Sara Ferraris, Sergio Perero, Giovanna Gautier di Confengo, Alessandro Chiesa, Monica Ferraris	Alessandro Chiolerio, Sergio Bocchini, Ignazio Roppolo, Matteo Stoppa, Paolo Motto Ros, Marco Crepaldi, Danilo Demarchi, Candido Fabrizio Pirri

**Wednesday Morning / 18 November / Oval Lingotto**

**Session MS8**

**Small satellites for big missions: challenges and opportunities**

0825	0845	0905	0925	0945	1005	1025	1045
Operational capabilities of next-generation nanosatellites	Cubesats for space exploration: a new paradigm for planetary science missions*	Merging educational with technical challenges in small satellite missions in the experience of ESA's education office	Assembly, integration and test lessons learned from small satellite development	Cubesat technology demonstrator :bifocal metrology , innovative space metrology system	Microsatellite technologies: recent activities at the University of Pisa*	Preliminary mission analysis of a CubeSat constellation in support of COSMO SkyMed	SITAEL all-electric small satellites for multi-purpose missions*
Marco Villa, Fabio Nichele, Sabrina Corpino	Sabrina Corpino	Piero Galeone, Joost Vanreusel, Antonio De Luca, Matteo Boerci, Christian Bungeroth	Vittorio Ancona	Fulvio Bresciani, Vittorio Ancona	Salvo Marcuccio	Domenico Cascone, Stefano Federici, Andrea Cici	Nicola Melega, Vincenzo Stanzione, Mario Traghi

**Wednesday Morning / 18 November / Oval Lingotto**

**Session MS2**

**IXV Minisymposium**

0825	0845	0905	0925	0945	1005	1025	1045
The IXV mission from conception to development and successful completion*	IXV re-entry demonstrator: mission overview, system challenges and flight reward	IXV mission analysis and flight mechanics: from design to flight*	Intermediate experimental vehicle, ESA program aerodynamics - aerothermodynamics key technologies for spacecraft design and successful flight*	The development, verification and performances of the IXV guidance, navigation and control subsystem	CMC windward TPS and nose of the IXV vehicle: qualification, integration, and flight	IXV avionics architecture: from design to mission results*	The IXV ground segment design, implementation and operations
G. Tumino, S. Mancuso, J.M. Gallego, S. Dussy, J.P. Preaud, G. Di Vita, P. Brunner	A. Denaro, S. Mancuso	D. Bonetti, G. Blanco, G. De Zaiacomo, I. Pontijas, C. Parigini, E. Bassano, R. Carducci, S. Mancuso	S. Dutheil, J. Pibarot, D. Tran, J.J. Vallee, J.P. Tribot, G. Rufolo, S. Mancuso	R. Haya, V. Marco, M. Kerr	T. Pichon, F. Buffenoir	M. Succa, I. Boscolo, A. Drocco, S. Dussy	Giovanni Martucci di Scarfizzi, Alessandro Bellomo, Ivano Musso, Diego Bussi, Massimo Rabaioli, Gianfranco Santoro, Gerhard Billig, Jose Maria Gallego Sanz

**Wednesday, 18 November 2015, Oval Lingotto**

**1055 - 1115**

**Coffee-Break**

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**Wednesday, 18 November 2015, Oval Lingotto**

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**1115 - 1210**

**Clean-Sky Round Table**

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**Wednesday, 18 November 2015, Oval Lingotto**

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**1210 - 1300**

**AIDAA General Assembly and Awards Ceremony**

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**Wednesday Afternoon / 18 November / Oval Lingotto**

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**1300 - 1400**

**Lunch**

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**Wednesday Afternoon / 18 November / Oval Lingotto**

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**1400 - 1530**

**Plenary Talks**

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**1400 - 1430**

Amalia Finzi and Franco Bernelli Zazzera

Politecnico di Milano

*Comets are nice to touch*

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**1430 - 1500**

Giorgio Saccoccia

ESA

*Technologies for Space Exploration: ESA initiatives and plans*

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**1500 - 1530**

Paolo Gaudenzi

Università La Sapienza Roma

*Sfide di meccanica strutturale nello sviluppo di un lanciatore*

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**Wednesday Afternoon / 18 November / Oval Lingotto**

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**1530 - 1545**

**Coffee-Break**

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**Wednesday Afternoon / 18 November / Oval Lingotto**

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**1545 - 1830** Addresses of Local, National and Finmeccanica Authorities

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**Wednesday Afternoon / 18 November / Oval Lingotto**

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**1830**

**BUS DEPARTURE FROM OVAL LINGOTTO TO VILLA SASSI**

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**1900**

**WELCOME DRINK AT VILLA SASSI**

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**2000**

**DINNER AT VILLA SASSI**

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**2300**

**BUS DEPARTURE TO THE CITY CENTER**

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