

Preliminary Programme

6 June 2018 - Wednesday

9.00 - 9.15 Plenary Welcome Address

- M. Gradu - *SAE International 2018 President*

9.15 - 11.00 Plenary Opening Keynotes

- Outlook for Future Powertrains for Significant CO₂ Reductions
T. Johnson - *Corning Inc.*
- Powertrains of the Future - in the Crossfire between Desire and Reality
M. Bargende - *Universitat Stuttgart*
- Vision 2050: how low carbon liquid fuels and efficient vehicles will contribute to the low emission mobility
J. Cooper - *FuelsEurope*
- Title TBD
R. Vavassori - *CLEPA*
- Title TBD
A. Nervo - *SKF*

11.00 - 11.40 Networking Break

11.40 - 13.00 Parallel Sessions

New Powertrain Developments

- Improvement of Diesel Engine Emissions and Fuel Consumption by Thermal Management
D. Queck, S. Visser, B. Van Moergastel - *DENSO Automotive Deutschland GmbH*
C. Massano, M. Harada - *DENSO Thermal Systems SpA*
- The Key Role of Advanced, Flexible Fuel Injection Systems to Match the Future CO₂ Targets in an Ultra-light Mid-size Diesel Engine
A. Vassallo, F. Pesce - *GM Global Propulsion Systems*
C. Beatrice, G. Di Blasio, G. Belgiorno - *Istituto Motori*
G. Avolio - *Continental Corp.*
- Model-based combustion control for mission-dependent optimization of emissions and fuel consumption in diesel engines
S. d'Ambrosio, R. Finesso, O. Marello, E. Spessa - *Politecnico di Torino*
P. Biffali, G. Dellora, G. Hardy, A. Schoni - *FPT Industrial*
- Fundamental Investigations, Potentials and Operating Strategies for Pre-Chamber Spark Plugs in SI Engines
M. Sens - *IAV GmbH*

Aero & Rolling Resistance

- Potential of Porsche reference cars for aerodynamic development
F. Cogotti, M. Pfadenhauer, T. Wiegand - *Porsche AG*
- Effects on the Aerodynamic Characteristics of Vehicles in Longitudinal Proximity Due to Changes in Style
G. Le Good, M. Resnick, P. Boardman, B. Clough - *Coventry University*
- Numerical analysis of aerodynamic impact on passenger vehicles during cornering
E. Josefsson, R. Hagvall, M. Urquhart, S. Sebben - *Chalmers University*
- Robust Optimization for Real World CO₂ Reduction
J. Gargoloff, B. Duncan, E. Tate, A. Alajbegovic, A. Belanger, B. Paul - *Exa Corporation*

Hybridization & Electrification

- 3D Simulation and design space exploration for battery pack weight reduction
M. Buonfiglioli - *Siemens*
- Concept design of a scalable fully integrated electric power unit
M. Pennese, A. Lega - *Mecaprom*
L. Malafronte - *Università di Salerno*
- Battery Stack Monitor Enhance Performances of Li-Ion Batteries in Hybrid and Electric Vehicles
C. Carriero, R. Zambon - *Analog Devices*
- Structural Performance Analysis of vehicle equipment for the FABRIC dynamic power transfer system
D. Parena, D. Muscogiuri - *AMET*
V. Cirimele - *Politecnico di Torino*

13.00 - 14.30 Networking Lunch

Morning

Preliminary Programme

Afternoon	14.30 - 15.50 Parallel Sessions		
	New Powertrain Developments	Aero & Thermal Management	Alternative & E-Fuels
	<ul style="list-style-type: none"> Techniques for CO₂ Emission Reduction over a WLTC. A Numerical Comparison of Increased Compression Ratio, Cooled EGR and Water Injection F. Bozza, V. De Bellis, L. Teodosio, D. Tufano, E. Malfi - <i>Università di Napoli Federico II</i> Fundamental Investigations about Heated Fuel Injection on SI Engines M. Sens - <i>IAV GmbH</i> Real-World Fuel Saving Potential of VVA Functionalities for Light-Duty Diesel Engines T. Koerfer - <i>FEV Group GmbH</i> The New FCA Generation of SI Engine M. Ferrera - <i>FCA ITALY S.p.A.</i> 	<ul style="list-style-type: none"> Underhood Airflow Management T. Yasuda - <i>DENSO Corporation</i> Thermal Management of High Voltage Batteries J. Tissot, K. Azzouz, I. Traore, P. Leblay - <i>Valeo Thermal Systems</i> Maximizing Coasting of 48V Vehicles with Cold-Storage Evaporator M. Özbek, S. Nishida, M. Biglia, V. Kohli, A. Inaba, T. Györög, M. Nishikawa - <i>DENSO Corporation</i> A Comprehensive Approach for Estimation of Automotive Component Life Due To Thermal Effects A. El-Sharkawy - <i>FCA US LLC</i> 	<ul style="list-style-type: none"> Methanol, From Electrons to Engines G. Dolan, E. Dekker - <i>Methanol Institute</i> Autogas LPG: A Low-Carbon Solution, Available Today and Ready for Tomorrow C. Nourigat - <i>European LPG Association (AEGPL)</i> Influence of combustion efficiency on quasi-dimensional simulation of spark ignition engines fueled with methane and hydrogen A. Irimescu, F. Catapano, S. Di Iorio, P. Sementa - <i>Istituto Motori</i> Proposing an Innovative Real-Time Strategy for Controlling Emissions and Performance of Modern Natural Gas Engines R. Amirante, E. Distaso, P. Tamburrano - <i>Politecnico di Bari</i> S. Di Iorio, P. Sementa - <i>Istituto Motori</i> R. Reitz - <i>University of Wisconsin</i>
	15.50 - 16.30 Networking Break		
	16.30 - 17.30 Plenary Session - Legislation Framework & Future Scenarios		
	<ul style="list-style-type: none"> A Model Based Definition of a Reference CO₂ Emissions Value for Passenger Cars under Real World Conditions Z. C. Samaras, D. Tsokolis, A. Dimaratos, L. Ntziachristos, S. Doulgeris - <i>Aristotle University of Thessaloniki</i> N. Ligterink, W. Vonk, R. Cuelenaere - <i>TNO Automotive</i> New WLTP CO₂ Regulation Impact on Electrified Powertrain Components Characteristics and Vehicle Road Load Parameter Optimization L. Orofino - <i>FCA ITALY S.p.A.</i> A. Piu - <i>Centro Ricerche Fiat SCpA</i> An integrated framework to deal with the gap between type-approval and in-use vehicle fuel consumption and CO₂ emissions A. Tansini, B. Ciuffo, G. Fontaras, N. Zacharof - <i>EU Commission Joint Research Centre</i> 		
	17.30 - 18.15 Plenary Closing Keynotes		
<ul style="list-style-type: none"> Title TBD P. Dolejsi - <i>ACEA</i> Title TBD G. Cornacchia - <i>Centro Ricerche Fiat SCpA</i> 			

Preliminary Programme

7 June 2018 - Thursday

8.30 - 9.30 Plenary Session - From Well to Wheels to Life Cycle Assessment

- Zero-CO₂ Powertrains and their Different Shades of Green
C. Schernus - *FEV Europe GmbH*
- Economic and Climate Advantages of Secondary-Loop Motor Vehicle Air Conditioners (MACs)
S. Andersen, K. Taddonio, M. Soffer, N. Sherman - *Institute for Governance & Sustainable Development*
T. Craig, L. Leitzel - *Mahle*
J. Baker, S. Chowdhury - *Mahle Behr Troy Inc*
S. Kapoor, P.V. Nagarhalli, J. Meena - *Tata Motors Ltd*
- Take-home Messages from the Applications of Life Cycle Assessment on Lightweight Automotive Components
M. Delogu, L. Zanchi, C. A. Dattilo - *Università di Firenze*
S. Maltese - *Università di Bologna*
R. Riccomagno - *Magneti Marelli SpA*
M. Pierini - *Università di Trento*

9.30 - 10.50 Parallel Sessions

Alternative & E-Fuels

- The Eni approach to eco-sustainable solutions for mobility and environmental protection
G. Tannoia - *ENI*
- Natural gas: a global answer to the transport system challenges
A. Gerini - *NVGA*
- CO₂ mitigation through on-board capture from vehicle exhausts
T. A. Hatton - *Massachusetts Institute of Technology (MIT)*
- A Lean CNG Combustion for Highest Engine Efficiencies Above 43% Utilising an Ignition Chamber
M. Weissner - *Volkswagen AG*

Aero & Thermal Management

- Thermal management architectures virtual evaluation for HEV/PHEV
W. Ferraris, M. Rostagno, F. Bettoja - *Centro Ricerche Fiat SCpA*
- Reduced Model of a Vehicle Cabin for transient thermal Simulation
D. Klemm, N. Widdecke, J. Wiedemann - *FKFS*
W. Roessner - *Daimler AG*
- A dynamic test bench for the cooling water pump characterization under real operating conditions
R. Cipollone, D Di Battista - *Università dell'Aquila*
M. Borasso, M. Benincasa - *Meccanotecnica Umbra S.p.A*
- Virtual simulation for clutch thermal behavior prediction
F. Tosi - *Politecnico di Torino*
M. Gautero, L. Lorefice, N. Paola - *FCA ITALY S.p.A*

Lightweighting

- Sustainable composites for lightweight car interior components
P. Russo - *CNR*
- Lightweight plastic technologies to support weight saving for the automotive industry
M. Terragni - *ENGEL Italy*
- Affordable Lightweight Automobiles ALLIANCE project: first results of environmental and economic assessment from a Life-Cycle perspective
M. Delogu, F. Del Pero, L. Zanchi - *Università di Firenze*
M. Ierides, V. Fernandez - *Bax Innovation Consulting*
K. Seidel - *FKA mbH*
D. Thirunavukkarasu - *RWTH Aachen University*
T. Bein - *Fraunhofer LBF*
- Challenges and opportunities in design of new lightweight vehicle components at the age of Industry 4.0 and Automotive 4.0
G. Belingardi - *Politecnico di Torino*
G. Mastinu - *Politecnico di Milano*

Morning

Preliminary Programme

Morning	10.50 - 11.20 Networking Break		
	11.20 - 12.20 Parallel Sessions		
	Hybridization & Electrification	Aero & Thermal Management	Lightweighting
	<ul style="list-style-type: none"> Conventional and Electrically Heated Diesel Oxidation Catalyst Physical Based Modeling P. Ferreri, G. Cerrelli, Y. Miao, S. Pellegrino - <i>GM Global Propulsion Systems</i> L. Bianchi - <i>Powertech Engineering S.r.l.</i> Eco-driving Optimization Tool for Hybrid Vehicles with Low CO₂ Emissions J. Macek, P. Steinbauer, P. Denk, Z. Sika, J. Morkus - <i>Czech Technical University in Prague</i> Using a Traffic Simulator to Evaluate and Minimize Carbon Dioxide Emissions in Conventional and Hybrid Electric Vehicles over Real World Emissions Tests T. Donateo, M. Giovinazzi, A. Tamborino - <i>Università del Salento</i> 	<ul style="list-style-type: none"> The Evolution of the Comfort Experience and its Impact on the Consumption & EV Range G. De Pelsemaeker - <i>Valeo</i> Powertrain Thermal Management for CO₂ Reduction T. Castiglione, F. Rovense, S.G. Bova - <i>Università della Calabria</i> Total Thermal Management of Battery Electric Vehicles (BEVs) S. Chowdhury, L. Leitzel, M. Zima, M. Santacesaria - <i>Mahle Behr Troy Inc.</i> G. Titov, J. Lustbader, J. Rugh, J. Winkler - <i>National Renewable Energy Laboratory</i> A. Khawaja, M. Govindarajalu - <i>FCA US LLC</i> 	<ul style="list-style-type: none"> Research and development of a light-weighted cross member for commercial vehicles S. Cecchel, D. Ferrario - <i>Streparava SpA</i> G. Cornacchia, A. Panvini - <i>Università di Brescia</i> Application of Continuously Galvanized Steel in Europe: driving forces and game changers S. Koellerer - <i>Voestalpine Steel Division</i> Extended Target Weighing Approach - Balancing CO₂-Emissions, Costs and Mass during Product Development A. Albers, S. Revfi, M. Spadinger - <i>Karlsruhe Institute of Technology (KIT)</i>
	12.20 - 13.10 Plenary Keynotes		
	<ul style="list-style-type: none"> Title TBD M. G. Lisbona - <i>FCA ITALY S.p.A.</i> Title TBD P. Antonioli - <i>GM Global Propulsion Systems</i> 		
13.10 - 14.30 Networking Lunch			

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Afternoon	14.30 - 15.50 Parallel Sessions		
	Hybridization & Electrification	Aero & Rolling Resistance	New Powertrain Developments
	<ul style="list-style-type: none"> • Transient EGR control with 48V E-boost simulation using integrated model based development <i>J. Dalby - Ricardo UK Ltd</i> • Supercar Hybridization: A Synergic Path to Reduce Fuel Consumption and Improve Performance <i>L. Rolando, F. Millo - Politecnico di Torino</i> <i>F. Pulvirenti, M. Medda - Ferrari SpA</i> • 48V hybrid system technologies to develop the most efficient and cleanest Diesel <i>R. Romanato, F. Duma, R. Fuso, F. Acquaviva, A. Tripodi - GM Global Propulsion Systems</i> <i>L. Passilly, M. Vieracker - Continental Automotive GmbH</i> • Hybrid turbocharging as a technology to reduce CO₂ from internal combustion engines investigated by 1D numerical model <i>F. Ortenzi - ENEA</i> <i>P. Venturini, F. Rispoli - Università Sapienza di Roma</i> 	<ul style="list-style-type: none"> • FCA Full Scale Wind Tunnel : WLTP and coast down test performed with wind tunnel method <i>M. Stellato, L. Betti - FCA ITALY S.p.A.</i> • Experimental and Computational Study of the Flow around a Stationary and Rotating Isolated Wheel without the use of a Moving Ground Plane <i>L. E. Rajaratnam, A. D. Walker - Loughborough University</i> • Application of adjoint methods on drag reduction of current production cars <i>G. Francesconi - Politecnico di Torino</i> <i>L. Miretti - Centro Ricerche Fiat SCpA</i> <i>L. Loreface, F. Pitillo, N. Paola - FCA ITALY S.p.A.</i> • Motorsport and CO₂ Reduction: The Link Between Two Distant Worlds <i>D. Zinelli - Dallara</i> 	<ul style="list-style-type: none"> • Virtual Engine Development Toward CO₂ Emission Reduction: Downsized Turbocharged Engine with focus on Post-Oxidation and use of Alternative Fuels <i>F. Cupo, M. Chiodi, H. J. Berner - FKFS</i> <i>M. Bargende - Universitat Stuttgart</i> • Potentials of variable cross section compressor regarding surge line and compressor efficiency using engine test bench measurements and engine process simulation <i>J. Flinte, P. Eilts - Technische Universität Braunschweig</i> <i>T. Sextro, J. Seume - Leibnitz Universität Hannover</i> • Experimental investigation and modelling of a 1.5 kW axial turbine designed for waste heat recovery through a Rankine cycle <i>O. Dumont, V. Lemort - University of Liège</i> <i>M. Diny - PSA Peugeot Citroen</i> • Numerical Assessment of the CO₂ Reduction Potential of Variable Valve Actuation on a Light Duty Diesel Engine <i>A. Piano, F. Millo - Politecnico di Torino</i> <i>D. Di Nunno, A. Gallone - GM Global Propulsion Systems</i>
	15.50 - 16.10 Conference Closing Plenary Keynotes		
	<ul style="list-style-type: none"> • Title TBD <i>K. C. Scheel - VDA</i> 		
	16.10 - 16.30 Conference Closing Remarks		
	16.30 End of Conference		