Tuesday 11 December 2018

8:30 Registration and welcome coffee

9:30 Welcome address

Richard Tilagone, Director of Powertrain and Vehicle Division, IFPEN

SESSION 1: NUMERICS & MODELLING

9:40 Keynote: Accelerating Co-optimization of Engines and Fuels with High-Fidelity Simulations
S. Som (Argonne National Laboratories, USA)

10:30 Applying high-order compact scheme and block-based AMR to Compressible LES flow solver for IC engine
T. Nambu (JAXA, Japan)

10:55 Break

11:25 A LES Framework for Accurate Simulations of Reactive Engine Flows
T. Falkenstein (RWTH Aachen, Germany)

11:50 A comparison of combustion models for predicting cycle-to-cycle variation in a gasoline direct-injection engine using Large-Eddy Simulation
D. Probst (CSI, USA)

12:15 Characterization of Radiative Heat Transfer in Spark-Ignition Engine Through High-Speed Experiments and Simulations
L. Henrion (University of Michigan, USA)

12:40 Lunch

SESSION 2: PISTON ENGINE AERODYNAMICS

14:00 Multi-plane Time-resolved Particle Image Velocimetry (PIV) Flow Field Measurements in an Optical SIDI Engine for Large-Eddy Simulation (LES) Model Validations
D. Hung (University of Michigan-Shangai, China)

14:25 Characterizing the evolution of boundary layers in IC engines by combined laser optical diagnostics, Direct Numerical and Large-Eddy simulations
M. Schmidt (TU Darmstadt, Germany)

14:50 Large Eddy Simulations of Near Wall Flow and Heat Transfer in Internal Combustion Engines
A. Wu (University of Michigan, USA)

15:15 Break

15:45 On the modeling of non-equilibrium engine boundary layers in SI engines
W. Leudesdorff (TU Darmstadt, Germany)

16:10 Application of Zonal Hybrid URANS/LES Modeling to Internal Combustion Engine Flows
V. Krastev (University of Tuscia, Italy)

16:35 A Hybrid Temporal RANS-LES Method for internal combustion engine applications
Al H. Afailal (IFPEN, France)

17:00 Break

SESSION 3: INJECTORS & SPRAYS

17:30 A Novel Multiphase VOF Solver for the Simulation of Cavitating Nozzle Flows in GDi Injectors using OpenFOAM
F. Piscaglia (Politecnico di Milano, Italy)

17:55 The analysis of gasoline injector flow using LES-VOF approach: Spray G case
Z. Pavlovic (AVL, Austria)

18:20 Modeling the effects of intermittency on dispersion of droplets in high pressure diesel sprays - a stochastic SGS model for droplet acceleration
S. K. Oruganti (University of Lyon, France)

19:00 End of the presentations

Transfer

19:30 Dinner Le Fruit défendu

Wednesday 12 December 2018

8:15 Registration

SESSION 4: ICE COMBUSTION

8:35 Keynote: The benefit of simultaneous IC engine experiments and simulations
B. Böhm (TU Darmstadt, Germany)

9:25 DNS in simplified ICE configurations using immersed boundaries and detailed chemistry
D. Thévenin (University of Magdeburg, Germany)

9:50 Validation of Large-Eddy Simulation with experimental measurement of Lean Burn Engine Combustion
O. Benoit (Toyota Motorsport, Germany)

10:15 Break

10:45 LES of fuel injection, internal aerodynamics and combustion variability in a homogeneous GDI engine
F. Nicollet (Daimler, Germany)

11:10 Ignition Modeling for Controlling Cyclic-Variability
C. Rutland (University of Wisconsin, USA)

11:35 Exploring cyclic combustion variability and knock in a single cylinder production GDI engine using LES
O. Colin (Renault, France)

12:00 Numerical Analysis of Cyclic Combustion Variations in Large Dual-Fuel Engines Using Large-Eddy Simulation
M. Reißig (FVTR, Germany)

12:25 End of the presentations

12:30 Lunch and farewell