2023 CONVERGE CFD Conference · Agenda

Tuesday, September 26, 2023 · Online

7:55 AM - 8:00 AM ○ Welcome
Kelly Senecal | Convergent Science

8:00 AM - 8:40 AM ○ **Keynote | The Role of CFD in the Design of Next-Generation Power Units for F1's Sustainable Future**
Ben Hodgkinson | Red Bull Ford Powertrains
*Not available on demand

8:40 AM - 9:05 AM ○ Multi-Scale Simulations of Direct Liquid Cooling of Electric Machines
Guillaume Vinay | IFP Energies nouvelles

9:05 AM - 9:30 AM ○ Investigation of Combustion Models for Li-Ion Battery Fire During Thermal Runaway
Mohammad Parhizi | UL Research Institutes

9:30 AM - 9:40 AM ○ Break

9:40 AM - 10:05 AM ○ RFM: A New Approach to Simulating Fully Compressible Two-Phase Flows
Chaouki Habchi | IFP Energies nouvelles

10:05 AM - 10:30 AM ○ Breakup Model Enhancement for Lagrangian Simulation of Flash-Boiling Real-Fuel Sprays
Francesco Duronio | Università degli studi dell'Aquila

10:30 AM - 10:55 AM ○ Enhancing Ducted Fuel Injection Simulations: Assessment of RANS Turbulence Models Using LES Data
Cristiano Segatori | Politecnico di Torino

10:55 AM - 11:10 AM ○ Sponsor Presentation
Tecplot

11:10 AM - 12:00 PM ○ Lunch

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12:00 PM - 2:00 PM	O	**CONVERGE Workshop: Automotive**
2:00 PM - 2:25 PM	O	Hydrogen Internal Combustion Engine Developments: Physical Phenomena and Related Challenges Olivier Laget | IFP Energies nouvelles
2:25 PM - 2:50 PM	O	CFD Exploration of Ammonia Injection, Ignition and Combustion in SI Engine Using Plasma Assisted Igniters Jacopo Zembi | University of Perugia
2:50 PM - 3:15 PM	O	Numerical Investigation of Ammonia Spray Autoignition Enhanced by Dissolved Hydrogen in Spray D Configuration Ahmad Hadi Bakir | University of Tennessee Space Institute
3:15 PM - 3:40 PM	O	Fundamental Investigation of Direct Injection Compression Ignition of Hydrogen in an Internal Combustion Engine for Class 8 Heavy Duty Truck Application Rohan Verma | FEV North America, Inc.
3:40 PM - 3:50 PM	O	Break
3:50 PM - 4:15 PM	O	Developing a Modelling Approach to Simulate Combustion of Ammonia/Hydrogen Mixtures Joel Reji Mathai | University of Massachusetts Lowell
4:15 PM - 4:40 PM	O	IMPACT: Overview and Research Progress Yuanjiang Pei | Aramco Americas
4:40 PM - 5:05 PM	O	Update on the Computational Chemistry Consortium Henry Curran | University of Galway

7:55 AM - 8:00 AM	○	Welcome Back
8:00 AM - 8:25 AM	○	Flame Dynamics Under the Effect of High-Frequency Flow Oscillations Hassan Tofaili | IFP Energies nouvelles
8:25 AM - 8:50 AM	○	Development of Innovative Diesel Burners for Advanced Temperature Management of Engine Aftertreatment Systems Andrea Bianco | POWERTECH Engineering
8:50 AM - 9:15 AM	○	Thickened Flame Model Adaptation for Large-Eddy Simulation of Dual-Fuel Combustion Engines Sarah Fehér | IFP Energies nouvelles
9:15 AM - 9:40 AM	○	Thickened Flame Model Adaptation to Non-Unity Lewis Number Mixtures Considering Stretched Flame Configurations Sandy Poncet | IFP Energies nouvelles *Not available on demand
9:40 AM - 9:50 AM	○	Break
9:50 AM - 10:15 AM	○	Visualizing the Effects of Parcel Injection Location and Injector Geometry Changes Using RANS and LES Aman Kumar | University of Massachusetts Lowell
10:15 AM - 10:40 AM	○	An Engineering Spray Model for Time-Varying Cone Angle and Swirl Lyle Pickett | Sandia National Laboratories
10:40 AM - 11:05 AM	○	Low-Pressure Swirl Burner for Marine Propulsion Applications Colin Wildman | University of Massachusetts Lowell
11:05 AM - 12:00 PM	○	Lunch

2023 CONVERGE CFD Conference · Agenda

Wednesday, September 27, 2023 · Online

12:00 PM - 2:00 PM	○	**CONVERGE Workshop: Energy**
2:00 PM - 2:25 PM	○	A Critical Assessment of the Impact of Aeroelasticity on Multi-Megawatt Wind Turbine Upscaling Leonardo Pagamonci | Università degli Studi di Firenze
2:25 PM - 2:50 PM	○	Evaluation of a Numerical Wake Tank Implemented in the CONVERGE Code for the Hydrodynamics of Floating Wind Turbines Marion Hanne | IFP Energies nouvelles *Not available on demand
2:50 PM - 3:15 PM	○	Optimization of the Primary Oil Separation Inside an Oil Flooded Rotary Vane Compressor Using CFD and DoE and Measurements James Willie | CVS Engineering GmbH *Not available on demand
3:15 PM - 3:40 PM	○	Large Eddy Simulation of Hydrogen Deflagrations Using the Thickened Flame Model With Stretch Sensitivity Adaptation Cédric Mehl | IFP Energies nouvelles
3:40 PM - 3:50 PM	○	Break
3:50 PM - 4:15 PM	○	DNS of Turbulent Premixed Ammonia/Hydrogen Kernels: An Overview of Reduction Possibilities Rob Bastiaans | Eindhoven University of Technology
4:15 PM - 4:40 PM	○	Comparison of Different Turbulence Models in a Transient Three-Dimensional Multiphase Ejector Simulation Operating With Transcritical Carbon Dioxide Sreetam Bhaduri | Purdue University
4:40 PM - 5:05 PM	○	Validation of a Numerical Approach to Model Hydrogen Combustion in Gas Turbine Engines Brian Connolly | Southwest Research Institute

2023 CONVERGE CFD Conference · Agenda

Thursday, September 28, 2023 · Online

7:55 AM - 8:00 AM ○ Welcome Back

8:00 AM - 8:25 AM ○ LES Modeling of Combustion Dynamics in a Hydrogen-Air Coupled Rotating Detonation Combustor-Turbine System
Pinaki Pal | Argonne National Laboratory
*Not available on demand

8:25 AM - 8:50 AM ○ LES Prediction of the Ignition Map for a Model Aeronautical Spray Gas Turbine
Olivier Colin | IFP Energies nouvelles

8:50 AM - 9:15 AM ○ LES of Flame Blowout in Turbulent Premixed Ammonia/Hydrogen/Nitrogen-Air Combustion
Veeraraghava Raju Hasti | North Carolina State University

9:15 AM - 9:50 AM ○ Break

9:50 AM - 10:15 AM ○ Real Fluid Modeling Tabulated Method vs Neural Network
Bruno Delhom | IFP Energies nouvelles

10:15 AM - 10:40 AM ○ GPU Chemistry Acceleration in CONVERGE With Zero-RK
Russell Whitesides | Lawrence Livermore National Laboratory

10:40 AM - 11:05 AM ○ Taking Variable Timestep Into Account for Neural Network Accelerated Chemistry Solving
Pablo Chartier | IFP Energies nouvelles

11:05 AM - 11:30 AM ○ A Physics-Constrained Neural Ordinary Differential Equations Approach for Robust Data-Driven Modeling of Chemical Kinetics
Tadbhagya Kumar | Argonne National Laboratory
*Not available on demand

2023 CONVERGE CFD Conference · Agenda

Thursday, September 28, 2023 · Online

Time		Session
11:30 AM - 12:00 PM	O	Lunch
12:00 PM - 2:00 PM	O	**CONVERGE Workshop: Aerospace**
2:00 PM - 2:25 PM	O	What's New in CONVERGE Keith Richards | Convergent Science
2:25 PM - 2:50 PM	O	Development of a PSU Child Centrifugal Blood Pump Choon-Sik Jhun | Penn State College of Medicine
2:50 PM - 3:15 PM	O	Numerical Modeling of Viral Aerosol Transport in Different Environments: Music Classroom and Human Respiratory Airways Sai Ranjeet Narayanan | University of Minnesota
3:15 PM - 3:30 PM	O	Break
3:30 PM - 5:30 PM	O	**CONVERGE Workshop: Biomedical**

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