SOLVE THE HARD PROBLEMS

**CONVERGE USER CONFERENCE
NORTH AMERICA—2017**

September 25–29, 2017
Detroit, MI

CONVERGE
CFD SOFTWARE

SCHEDULE

TUESDAY, SEPTEMBER 26

7:00-7:45	**BREAKFAST**

7:45-8:00 WELCOME
Kelly Senecal, *Convergent Science*

8:00-8:40 HPC DRIVING ADVANCES IN MULTI-PHYSICS SIMULATIONS
Robert Wagner, *Oak Ridge National Laboratory*

8:40-9:05 ACCELERATING URANS CYCLE-TO-CYCLE VARIATION STUDIES VIA PARALLEL PERTURBATION METHOD
Nitesh Attal, *Convergent Science*

9:05-9:30 CHT METHODOLOGY DEVELOPMENT, APPLICATION TO SPARK IGNITION ENGINE
Frédéric Ravet, *Renault*

9:30-9:55 UREA DEPOSIT PREDICTIONS IN MID/HEAVY DUTY VEHICLE AFTERTREATMENT SYSTEM
Yong Sun, *Isuzu Technical Center of America*

9:55-10:10 SPONSOR TALK — TOTALCAE

10:10-10:25 BREAK

10:25-10:50 A LAGRANGIAN SPRAY-WALL INTERACTION MODEL APPLIED TO HIGH-PRESSURE SPRAYS
Le Zhao and Roberto Torelli, *Michigan Technological University and Argonne National Laboratory*

10:50-11:15 RECENT PROGRESS IN NOZZLE FLOW AND SPRAY MODELING AT ARGONNE
Roberto Torelli, *Argonne National Laboratory*

11:15-11:40 MODELING OF LIQUID FILM VAPORIZATION UNDER BOILING CONDITION IN CONVERGE 2.4
Chaouki Habchi, *IFP Energies nouvelles*

11:40-12:05 MODELING A GASOLINE SPRAY UNDER HEAVY-DUTY DIESEL ENGINE CONDITIONS
Yuanjiang Pei, *Aramco Services Company*

12:05-1:05 LUNCH

1:05-1:20 SPONSOR TALK — MICROSOFT AZURE

1:20-1:45 SPARK IGNITION MODEL DEVELOPMENT FOR DILUTE/LEAN ENGINE COMBUSTION SIMULATIONS
Ricardo Scarcelli, *Argonne National Laboratory*

1:45-2:10 ECFM-ISSIM VALIDATION ON PSA EB2DT ENGINE DATA BASE
Stéphane Chevillard, *IFP Energies nouvelles*

2:10-2:35 EFFECT OF WATER INJECTION ON CHEMISTRY AND THERMODYNAMICS IN A GASOLINE ENGINE
Corinna Netzer, *Brandenburg University of Technology*

2:35-3:15 MASTERING CAE TECHNOLOGIES TO ENABLE EFFICIENCY GAINS IN OPPOSED-PISTON ENGINES
Gerhard Regner, *Achates Power*

3:15-3:30 SPONSOR TALK — INTELLIGENT LIGHT

3:30-3:45 BREAK

3:45-4:10 MOVING FROM POST-DICTION TO PREDICTION IN GAS TURBINES AND AFTERTREATMENT
Scott Drennan, *Convergent Science*

4:10-4:35 SIMULATIONS ENABLING CO-OPTIMIZATION OF ENGINES AND FUELS
Noah Van Dam, *Argonne National Laboratory*

4:35-5:00 CONVERGENT SCIENCE: COMPANY STATUS & FUTURE INNOVATION
Daniel Lee, *Convergent Science*

6:00 **NETWORKING:** FORD ROUGE FACTORY TOUR
Pre-registration required.

SCHEDULE

7:00-7:55	**BREAKFAST**
7:55-8:00	**WELCOME BACK** Katie Beutel, *Convergent Science*
8:00-8:40	**TRANSPORTATION ENERGY AND ICE TECHNOLOGY PATHWAYS** David Cleary, *Aramco Services Company*
8:40-9:05	**GLOBAL SENSITIVITY ANALYSIS FOR INSIGHTS INTO GASOLINE COMPRESSION IGNITION** Pinaki Pal, *Argonne National Laboratory*
9:05-9:30	**CFD SIMULATION OF AN OP2S GASOLINE COMPRESSION IGNITION ENGINE** Rodrigo Zermeno and Ahmed Abdul Moiz, *Achates Power and Argonne National Laboratory*
9:30-9:55	**WHAT TO EXPECT IN CONVERGE 3.0** Keith Richards, *Convergent Science*
9:55-10:10	**SPONSOR TALK — RESCALE**
10:10-10:25	BREAK
10:25-10:50	**A COMMON ENGINE PLATFORM FOR ENGINE LES DEVELOPMENT AND VALIDATION WITH CONVERGE** Xiaofeng Yang, *General Motors*
10:50-11:15	**LES OF TURBULENT PREMIXED FLAMES USING AMR AND DETAILED CHEMISTRY** Veeraraghava Raju Hasti, *Purdue University*
11:15-11:40	**DYNAMIC ADAPTIVE COMBUSTION MODELING OF DIESEL SPRAY FLAMES** Chao Xu, *University of Connecticut*
11:40-12:05	**UNDERSTANDING AND PREDICTING CYCLE-TO-CYCLE VARIATION THROUGH SIMULATION** Janardhan Kodavasal, *Argonne National Laboratory*
12:05-1:05	LUNCH
1:05-1:30	**A NEW PRF MECHANISM APPLIED TO THE PINNACLE OPPOSED-PISTON ENGINE** Charles Finney, *Oak Ridge National Laboratory*
1:30-1:55	**CFD MODELING OF THE GAS EXCHANGE PROCESS OF A SMALL HCCI FPLA** Aimilios Sofianopoulos, *Stony Brook University*
1:55-2:20	**SENSITIVITY ANALYSIS OF REACTION RATES OF N-DODECANE** Joshua Piehl, *Wayne State University*
2:20-2:45	**APPLICATION AND PERFORMANCE OF CHEMISTRY SOLVERS ON THE TITAN SUPERCOMPUTER** Russell Whitesides, *Lawrence Livermore National Laboratory*
2:45-3:10	**RECENT PROGESS IN TURBULENT COMBUSTION MODELING FOR CI AND SI ENGINES AT ANL** Prithwish Kundu, *Argonne National Laboratory*
3:10-3:25	**SPONSOR TALK — TECPLOT**
3:25-3:40	BREAK
3:40-4:05	**A SPECIES BASED IMPLEMENTATION OF ECFM3Z IN CONVERGE** Olivier Colin, *IFP Energies nouvelles*
4:05-4:30	**ETHANOL MECHANISM DEVELOPMENT AND VALIDATION USING AUTOMATED REACTION GENERATOR** Antowan Zyada, *Wayne State University*
4:30-4:55	**EMISSION PREDICTION AND VALIDATION** Tom Shieh, *Toyota USA*
4:55-5:20	**COUPLING OF PHYSICS BASED SEMI-EMPIRICAL SOOT MODEL WITH 3D CFD COMBUSTION MODEL** Saurabh Sharma, *Isuzu Technical Center of America*
5:20-5:45	**TURBULENT SPRAY COMBUSTION MODELING USING DIC AND FGM** Joshua Piehl, *Wayne State University*
6:00	**NETWORKING:** DINNER SOCIAL—DEARBORN INN *Pre-registration required.*