

ECN5: Engine Combustion Network 5th Workshop
Wayne State University (Danto Engineering Development Center)

Friday 31 March 2017

- 8:00 Registration
- 8:20-8:30 Welcome by Wayne State Hosts
- 8:30-8:40 Introduction and Mechanics
Lyle Pickett (Sandia), Gilles Bruneaux (IFPEN), Raúl Payri (CMT)
- Technical program (includes presentation and discussion in the time allotted)

Non-Reactive Diesel Spray

Organizer: Raul Payri (CMT)

Topic leads: Marco Arienti (Sandia), Michele Battistoni (Perugia), Michele Bardi (IFPEN)

- 8:40-9:00 Opening/closing transients of Spray D
Marco Arienti (Sandia)
- 9:00-9:30 Comparison of primary atomization of Spray A and Spray D
Michele Battistoni (Perugia)
- 9:30-10:00 Break
- 10:00-11:00 Vaporization and mixing of A/B/C/D
Michele Bardi (IFPEN)
- 11:00-11:30 Future directions for Diesel sprays
- 11:30-13:00 Lunch, group photo, and optional tour of Wayne St Labs (90 min)**

Diesel Combustion

Organizer: Gilles Bruneaux (IFPEN)

Topic leads: Evatt Hawkes (UNSW), Jose Garcia-Oliver (CMT), Scott Skeen (Sandia), Louis-Marie Malbec (IFPEN)

- 13:00-13:10 Diesel Combustion topics Introduction,
Jose Garcia-Oliver (CMT)
- 13:10-13:40 Spray C & D experimental summary
Jose Garcia-Oliver (CMT)
- 13:40-14:20 Ignition chemistry
Evatt Hawkes (UNSW)
- 14:20 15:00 Ignition progression to lift-off stabilization

Bart Somers (TU/e)
Combustion recession
15:00-15:30 Break
15:30-16:30 Soot
Noud Maes (TU/e), Scott Skeen (Sandia)
16:30-16:50 Spray B: test rigs versus engines
Louis-Marie Malbec (IFPEN)
17:00-17:30 Future directions for Diesel combustion topics
Finish 17:30
18:00-21:00 Dinner and free access to Michigan Science Center, 5020 John R Street

Saturday 1 April 2017

Spray G Gasoline Direct-Injection

Organizers: Scott Parrish (GM), Lyle Pickett (Sandia)

Topic leads: Chris Powell (Argonne), Daniel Vaquerizo (CMT)

8:30-8:40 Introduction, Scott Parrish (GM)
8:40-9:20 Nozzle geometry and near-nozzle experiments
Chris Powell, Katie Matusik (Argonne)
9:20-10:00 Internal and near-nozzle flow modeling
David Schmidt (UMass-Amherst)
10:00-10:30 Break
10:30-11:00 Liquid and vapor visualization experiments and modeling
Daniel Vaquerizo (CMT)
11:00-11:15 Liquid and vapor velocity experiments
Panos Sphicas (Imperial College)
11:15-12:00 Lagrangian modeling of Spray G
Lyle Pickett (Sandia)
12:00-13:00 Lunch (1 hour)
13:00-13:20 Future directions: Spray G at flashing conditions
Josh Lacey (Melbourne)
13:20-13:40 Future directions: Multiple-injection conditions

Scott Parrish (GM)
13:40-13:50 Future directions: Engine experiments
Scott Parrish (GM)

Standardization of ECN facilities, diagnostics, and modeling results

14:00-14:30 Quantitative extinction imaging using diffused backlighting as an ECN standard
Fredrik Westlye (Tech. Univ. Denmark)

14:30-15:00 Break

15:00-15:40 Experimental temperature/velocity control and implications for CFD
Koji Yasutomi (Hino Motors), Moez Ben Houidi (PPRIME)

15:40-16:00 Conclusions and overall future directions

Should finish at 16:00

16:30-18:30 Fun activity all together
Bowling at Historic Garden Bowl 4140 Woodward Ave., Midtown Detroit 48201

Spirit of the ECN

- A forum for open presentation and discussion and synthesis of modeling and experimental results, not usually found at conferences.
- Synthesis creates expert reviews on topics.
- We want to know what does NOT work, what is broken.
- Airing our dirty laundry, so that it can be cleaned.
- Policy is to not duplicate conference presentations.
- Not highlighting individual laboratories or groups, but rather, common research problems.