Light-Duty Reactivity Controlled Compression Ignition Drive Cycle Fuel Economy and Emissions Estimates

***Scott Curran*, *Zhiming Gao* and Robert Wagner**
Fuels, Engines, and Emissions Research Center
Oak Ridge National Laboratory

Poster Location P-07

Sponsor
Gurpreet Singh, Ken Howden
Office of Vehicle Technologies
U.S. Department of Energy

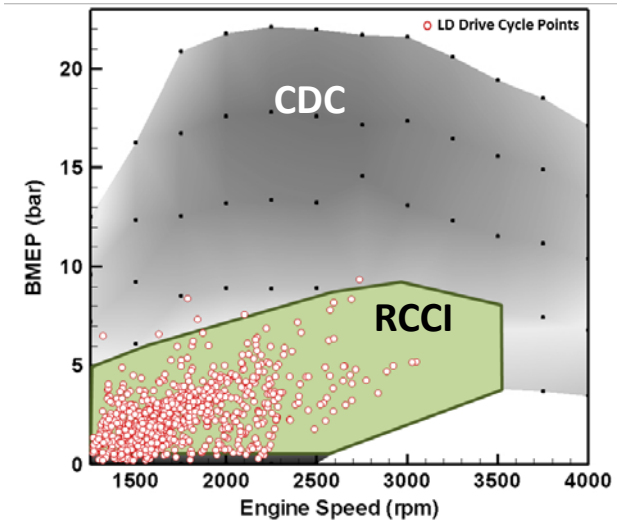
U.S. DEPARTMENT OF ENERGY

OAK RIDGE NATIONAL LABORATORY
MANAGED BY UT-BATTELLE FOR THE DEPARTMENT OF ENERGY

Vehicle Systems Simulations Using Experimental Data

Demonstrate improved modeled fuel economy of 15% for passenger vehicles solely from improvements in powertrain efficiency relative to a 2009 PFI gasoline baseline.

- The 2009 PFI gasoline baseline will be modeled using a representative engine map to ensure and accurate comparison.



RCCI has been shown in previous multi-cylinder experiments to have high brake thermal efficiencies with ultra-low NOx and soot emissions. However, the benefits and challenges of RCCI on light-duty vehicles over federal driving cycles are still not well understood.

Gross indicated efficiency

Brake (shaft) efficiency

Drive cycle efficiency