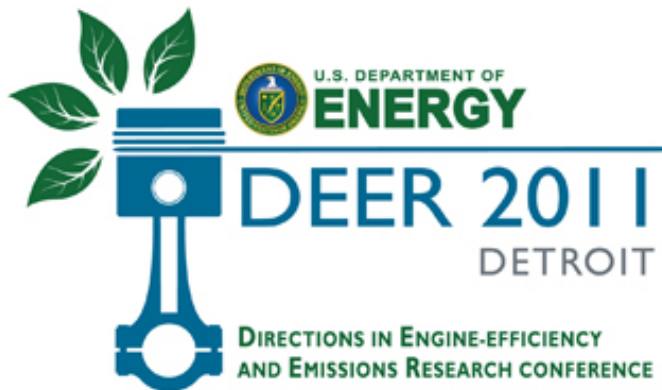


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Development of a Dynamic DOE Calibration Model

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Objectives

- Develop a dynamic model of a heavy duty diesel engine
- Determine hardware capability over the FTP cycle
- Optimize engine calibration in terms of cycle emissions and performance

Dynamic DOE Process

- Identify model inputs and outputs
- Identify input boundaries and excitation frequency ranges
- Generate and execute dynamic (chirp) test cycles for emissions model training and validation
- Generate and execute step DOE test cycles for temperature model training and test cell characterization
- Train and validate dynamic models
- Apply models for system optimization

Results

- Dynamic emissions models have been developed (validation error on the order of 5-10%)
- Moving forward with calibration optimization on FTP

