Unregulated Emissions from High-Efficiency Clean Combustion Modes – ORNL- FEERC
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Measurements at PCCI vs. baseline (production calibration)
Data at 1500 rpm, 2.6 BMEP
Reduces NOx by 90% and PM by 70% relative to baseline

HCCI: at same IMEP as PCCI
• NOx very low (2-12 ppm)
• PM, 0.8 - 5 FSN
• CO, 1300-3300 ppm
• HC, 2500-5000 ppm
Cracking products, partially-oxygenateds dominate HC

Methane, ethene, propene increase during HCCI. Evidence of cracking products?

Aldehydes higher in PCCI; high levels of EGR may promote partial oxidation

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