

# Which Is Greener: Idle, or Stop and Restart?

## *Comparing Fuel Use and Emissions for Short Passenger-Car Stops*

Linda Gaines, Eric Rask, and Glenn Keller  
*Center for Transportation Research  
Argonne National Laboratory*

P-09

October 17, 2012

DEER 2012  
Dearborn, MI



# Argonne measured and compared idling fuel use and emissions with those for restarting

Testing at 21°C on a late-model mid-sized American car shows that:

- Idling for more than 10 seconds uses more fuel and emits more CO<sub>2</sub> than engine restarting
- Idling fuel usage varies from 0.2 - 0.5 gal/h for passenger cars
  - increases with vehicle size and idle speed
- Criteria pollutant emissions are low for idling following catalyst activation
- Emissions from restarting are small compared to those from cold-starting
- The catalyst cools slowly so restarts after a short stop will not incur cold-start emissions

