Advanced Powertrain Research Facility
4WD Chassis Dynamometer Thermal Test Cell

“Research and Data Driven Lab”
“Independent Public Data”

**Test cell features**
- 4WD chassis dynamometer
  - Variable wheel base (180 inches max)
  - 250 hp/axle
  - 300 to 12,000 lb inertia emulation
- Radiant sun energy emulation
  - 850W/m² (adjustable)
- Variable speed cooling fan (0–62 mph)
- Gaseous fuel and hydrogen capable
- Diesel: Dilution tunnel, PM, HFID

**Thermal chamber**
- EPA 5 cycle capable
  - (20°F, 72°F and 95°F + 850W/m² solar load)
- Demonstrated as low as 0°F
- Intermediate temperatures possible

**Research aspects**
- Modular and custom DAQ with real time data display
- Process water available for cooling of experiment components
- Available power in test cell
  - 480VAC @ 200A
  - 208VAC @ 100A
- ABC 170 Power supply capable to emulate electric vehicle battery
- Custom Robot Driver with adaptive learning
- Several vehicle tie downs
  - chains, low profile, rigid,...
  - 2, 3 and 4 wheel vehicle capable

**Special instrumentation**
- State of the Art capability
- 5 gas emissions dilute bench with CVS (modal and bag emissions analysis)
- FTIR, Mobile Emissions unit
- Raw and Fast HC and NOx bench
- Aldehyde bench for alcohol fuels
- High precision power analyzers (testing and charging)
- Direct Fuel Flow meter
- CAN decoding and recording
- OCR scan tool recording
- Infra Red Temperature camera
- In cylinder pressure indicating systems
- In-situ torque sensor experience

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