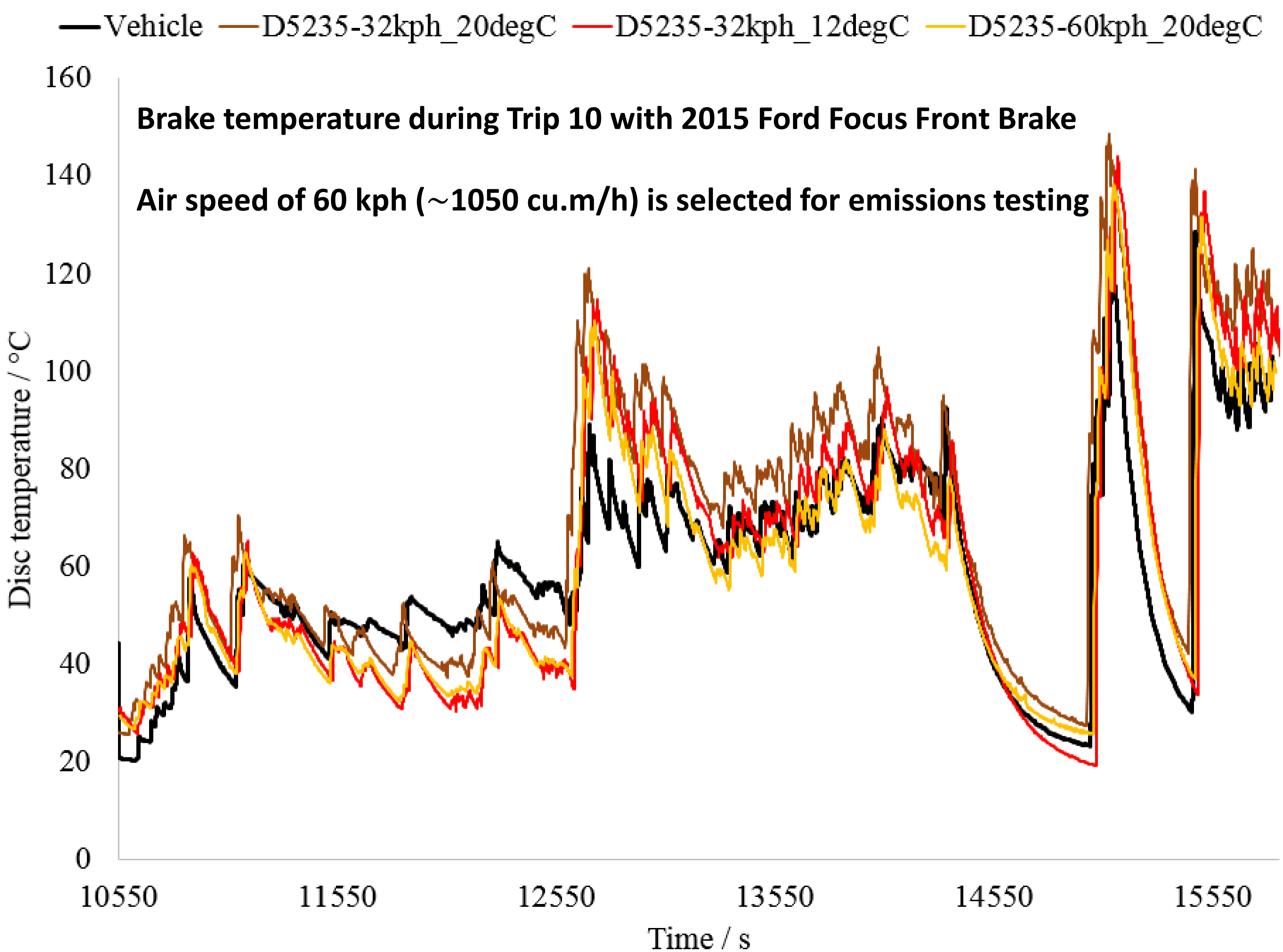
LINK Data (02/15/2019)

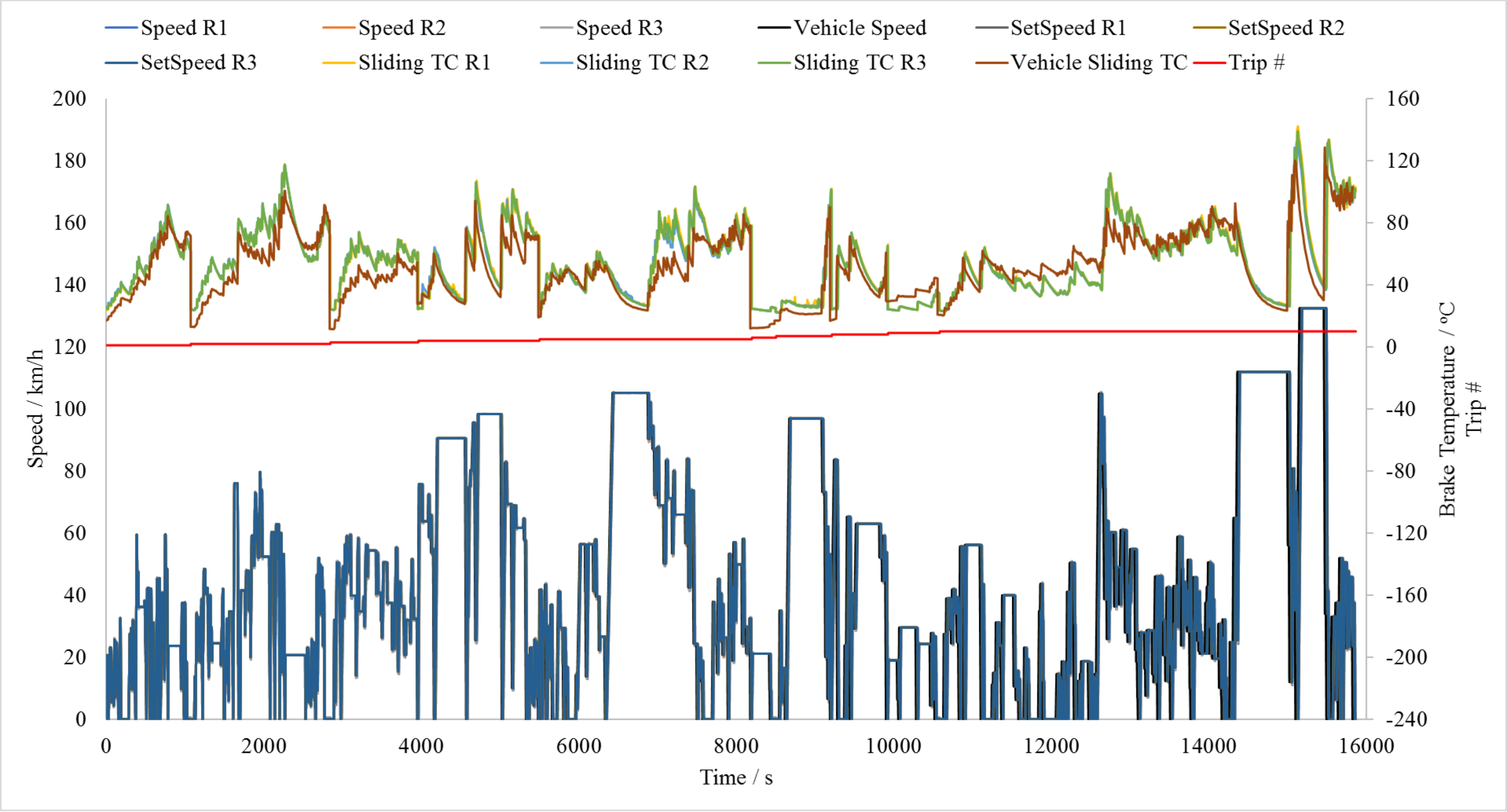
- Cooling air adjustment
- Vehicle-to-Dyno speed Reproducibility
- Dyno cycle-to-cycle Repeatability (Emissions data will be reported separately)
- Empirical calculations for Isokinetic & Anisokinetic sampling


Vehicle
D5235-32kph_20degC
D5235-32kph_12degC
D5235-60kph_20degC
Brake temperature during Trip 10 with 2015 Ford Focus Front Brake
Air speed of 60 kph (~1050 cu.m/h) is selected for emissions testing
Disc temperature / °C
0
20
40
60
80
100
120
140
160
10550
11550
12550
13550
14550
15550
Time / s

Three Repeats of WLTP-Brake Cycles

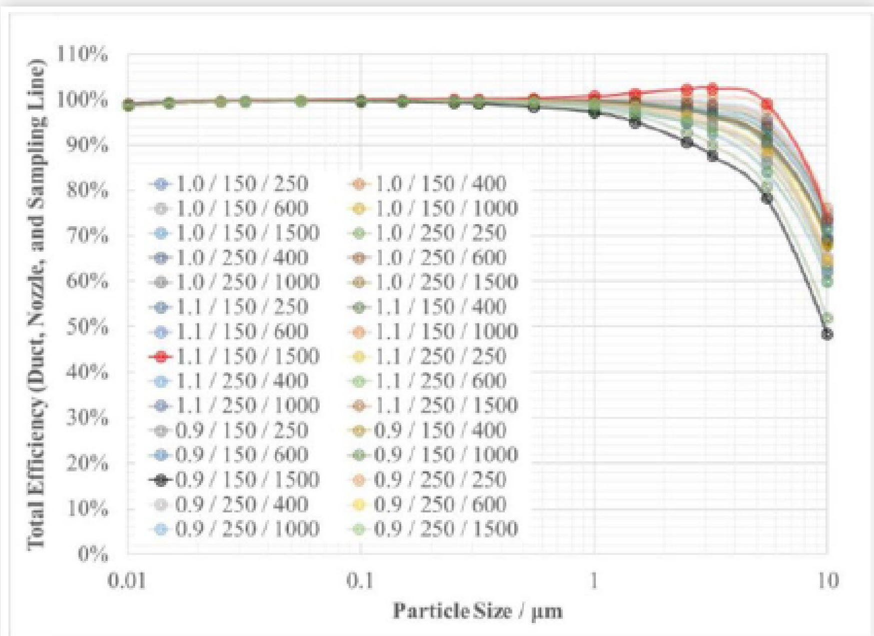
Vehicle: Speed and Disc temperature

Dyno: Speed setpoint (control), Actual speed (measured), and Disc temperature



Duct-to-Nozzle Velocity Ratio (Percent Isokinetic) Figure 41 shows efficiency departs from the 100% level for particles larger than 1.5 μm. For super-isokinetic (U_d/U_n = 0.9, or 90% percent isokinetic) efficiency is more likely to reduce proper sampling. Sub-isokinetic sampling (U_d/U_n = 1.1, or 110% percent isokinetic) offers higher transport efficiency than isokinetic sampling. Total transport efficiency for a particle size of 10 μm ranges from 48% (with U_d/U_n = 0.9, 150 mm duct dia., and 1500 m^3/h duct flow), to 74% ((with U_d/U_n = 1.1, 150 mm duct dia., and 1500 m^3/h duct flow).

FIGURE 41 Total aerosol transport efficiencies for isokinetic velocity ratios (0.9 to 1.1), duct diameters (150 and 250) mm, duct air flows between 250 m^3/h and 1500 m^3/h, and 30 lpm sampling flow



Agudelo, C., Vedula, R.T., and Odom, T., "Estimation of Transport Efficiency for Brake Emissions Using Inertia Dynamometer Testing," SAE Technical Paper 2018-01-1886, 2018, doi:10.4271/2018-01-1886.

Experimental validations not yet available