

Supplementary Material

for

Impact of Shortening Real Driving Emission (RDE) Test Trips on CO, NO_x, and PN₁₀ Emissions from Different Vehicles

Haiguang Zhao^{1,2}, Laihua Shi³, Xiaoliu Xu³, Jinshan Qiu³, Lan Li³, Junfang Wang^{1,2},
Wenhan Yu^{4,*} and Yunshan Ge⁴

¹State Environmental Protection Key Laboratory of Vehicle Emission Control and
Simulation, Chinese Research Academy of Environmental Sciences, Beijing, 100012, China

²Vehicle Emission Control Center, Chinese Research Academy of Environmental Sciences,
Beijing, 100012, China

³China Merchants Testing Vehicle Technology Research Institute Co., Ltd., Chongqing,
401329, China

⁴National Laboratory of Auto Performance and Emission Test, Beijing Institute of
Technology, Beijing 100081, China

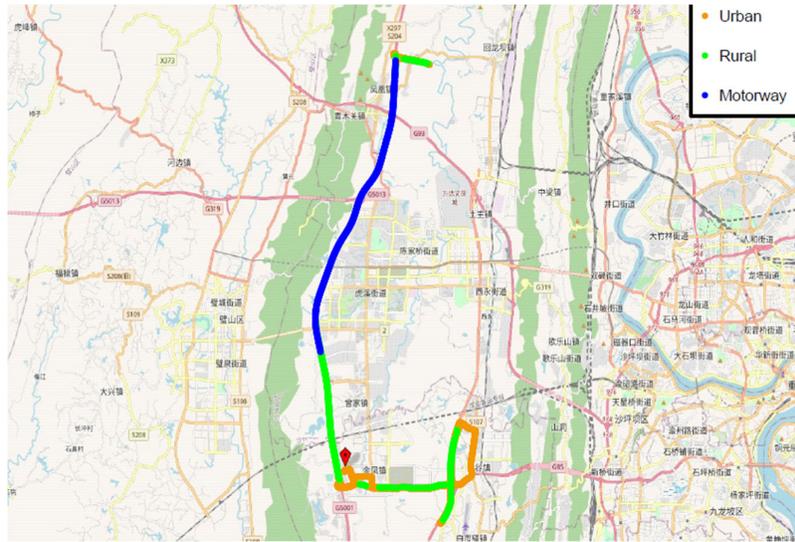


Figure S1. The test route for gasoline, diesel, and hybrid electric vehicles on standard trips.

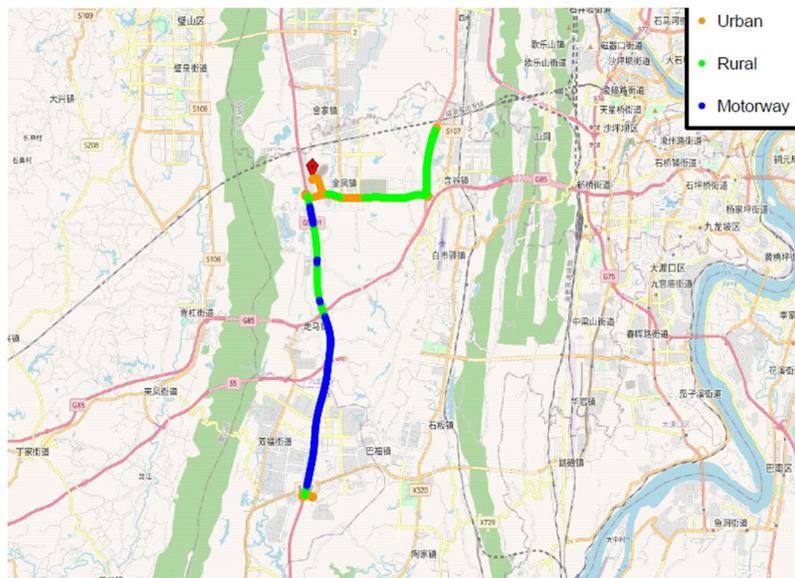


Figure S2. The test route for gasoline, diesel, and hybrid electric vehicles on short trips.

S1 The definitions of standard trips, short trips, full trip, and urban trip.

The standard trips are the standard test trip specified for RDE tests in the China VI regulations. The short trips are the shorter test trips selected for this study that meet the RDE experimental trip boundary requirements of the China VI regulation. Full trip is defined as the test trip for one complete experiment. Urban trip is the test trip on the urban segment of the test trip. The full test trips for both standard and short trips can be referred to as full trip, and both standard and short trips include urban trip.

Table S1. The $v \cdot a_{\text{pos}}-[95]$ and RPA of test routes.

		Gasoline vehicle		Diesel vehicle		Hybrid electric vehicle	
		Standard	Short	Standard	Short	Standard	Short
$v \cdot a_{\text{pos}}-[95]$ (m^2/s^3)	Urban	14.3	13.2	12.5	14.1	14.4	16.1
	Rural	18.0	14.3	18.9	20.8	17.1	22.1
	Motorway	12.3	14.0	18.0	17.5	15.6	15.9
RPA (m/s^2)	Urban	0.2876	0.2710	0.1581	0.2213	0.1973	0.2437
	Rural	0.1730	0.1540	0.0861	0.1626	0.1374	0.2165
	Motorway	0.1010	0.0910	0.0780	0.0930	0.1156	0.1266