These plotted curves to show, from various perspectives, the battery range of a
2018 Tesla Model 3 Long Range RWD.

The data for these is obtained by driving the car back and forth on a fairly flat road
multiple times, at different speeds, and recording the energy usage as shown by the car,
in watt−hours per unit distance travelled. This data is shown on one of the plots.

If some plots indicate a battery degradation, this is obtained from known or tested car
battery degradation.

If you have questions or concerns about any of the plots, you can contact me on various
online groups or at ted@tedtoal.net

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The author, Ted Toal, can be contacted via email at ted@tedtoal.net

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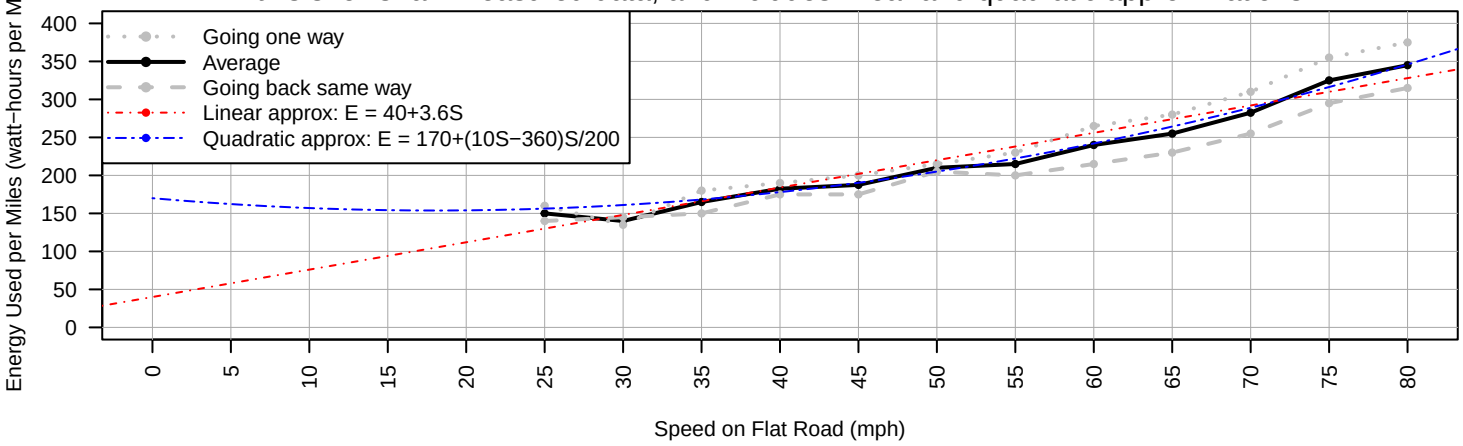
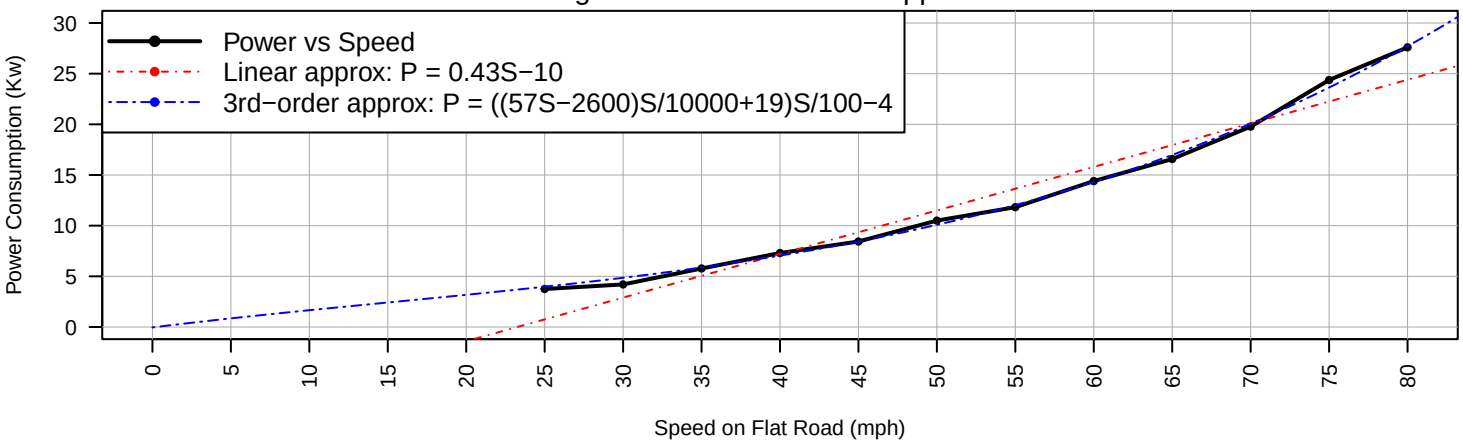
Energy Used per Miles on Flat Road, 2018 Tesla Model 3 Long Range RWD

this shows raw measured data, and includes linear and quadratic approximations



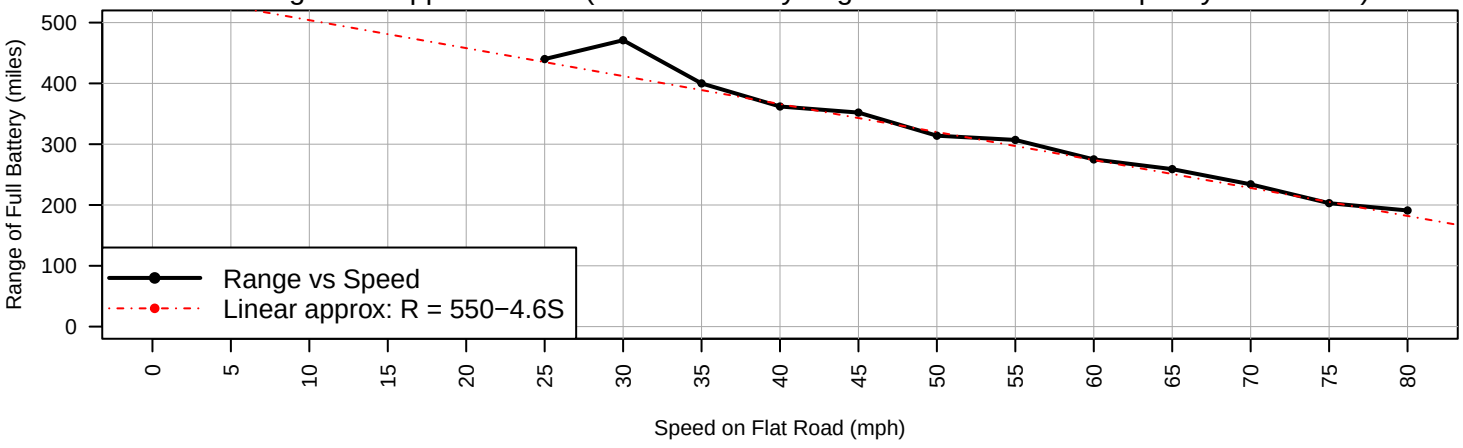
Power Consumption on Flat Road, 2018 Tesla Model 3 Long Range RWD

including linear and third−order approximations

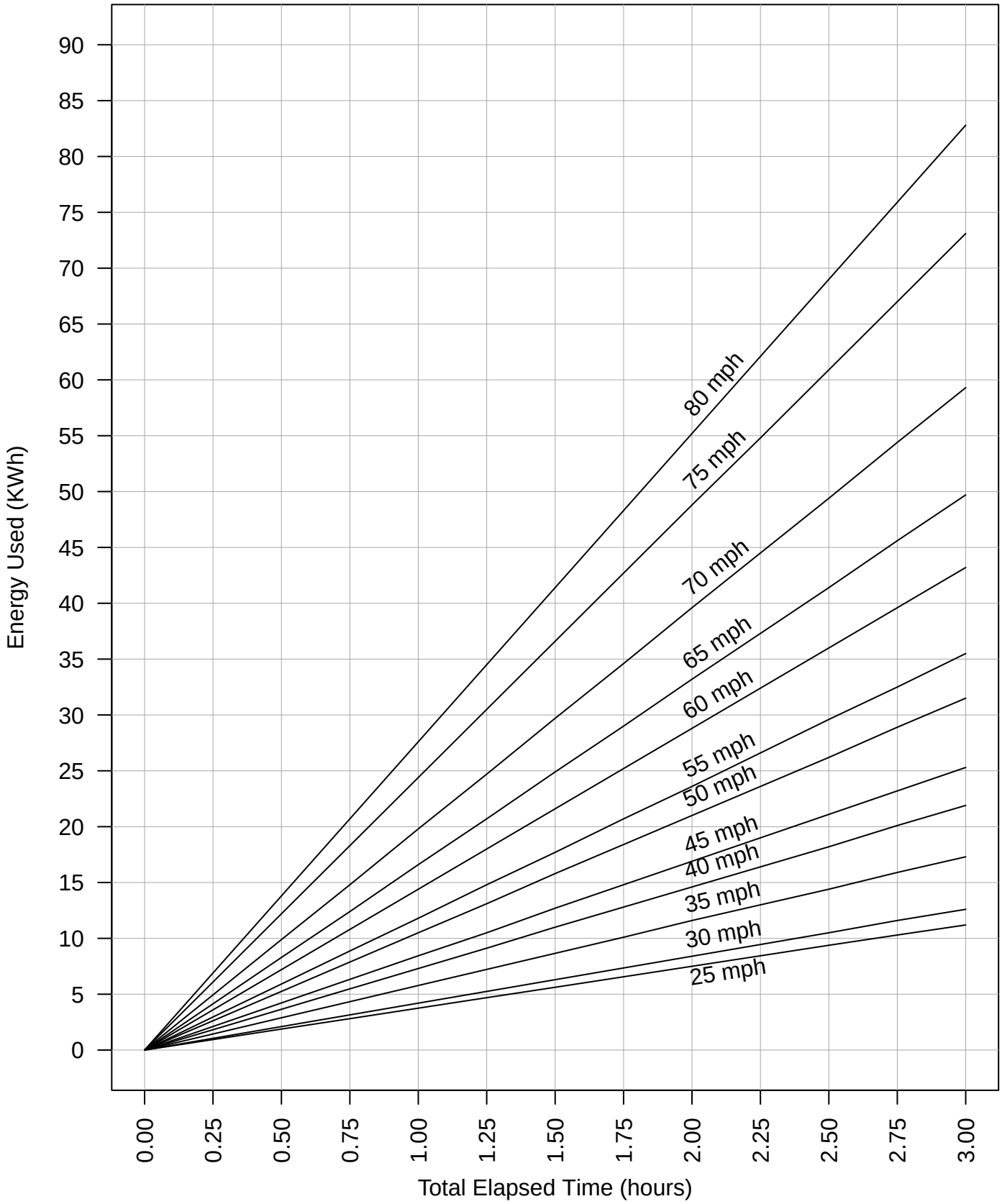


Estimated Range At Various Speeds, 2018 Tesla Model 3 Long Range RWD

including linear approximation (assume battery degradation of 12% for capacity of 66 KWh)

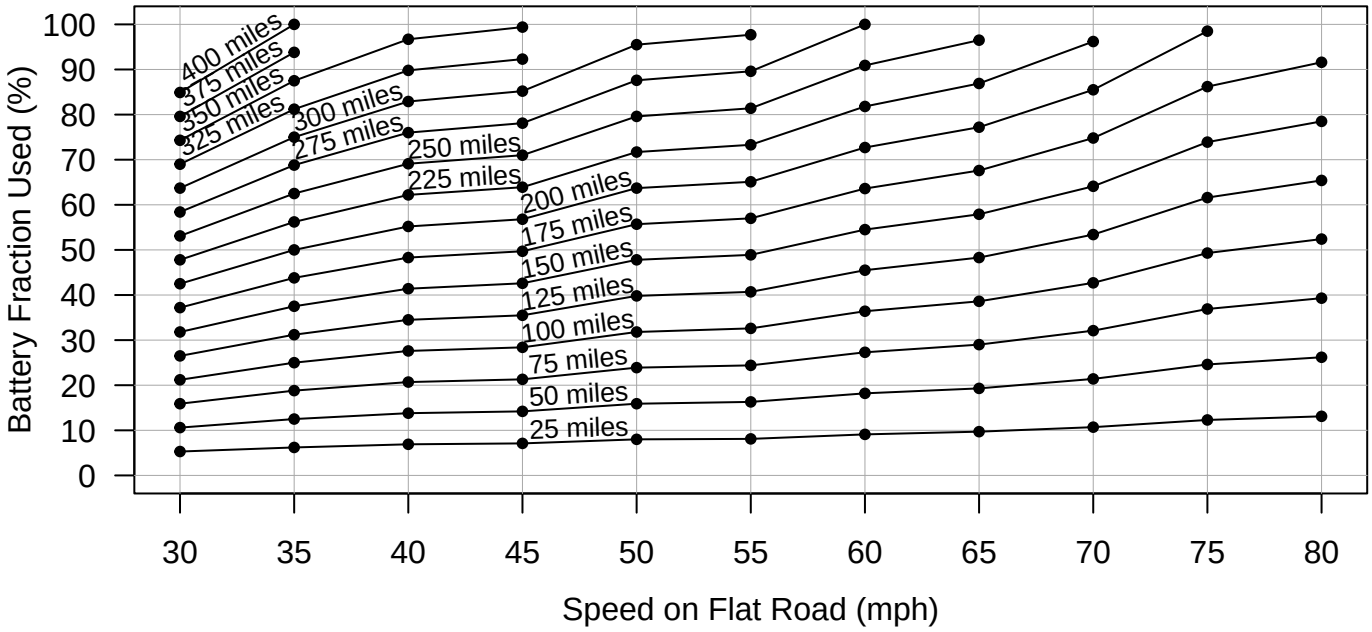


Energy Used over Hours Elapsed at Speeds on Flat Road
2018 Tesla Model 3 Long Range RWD



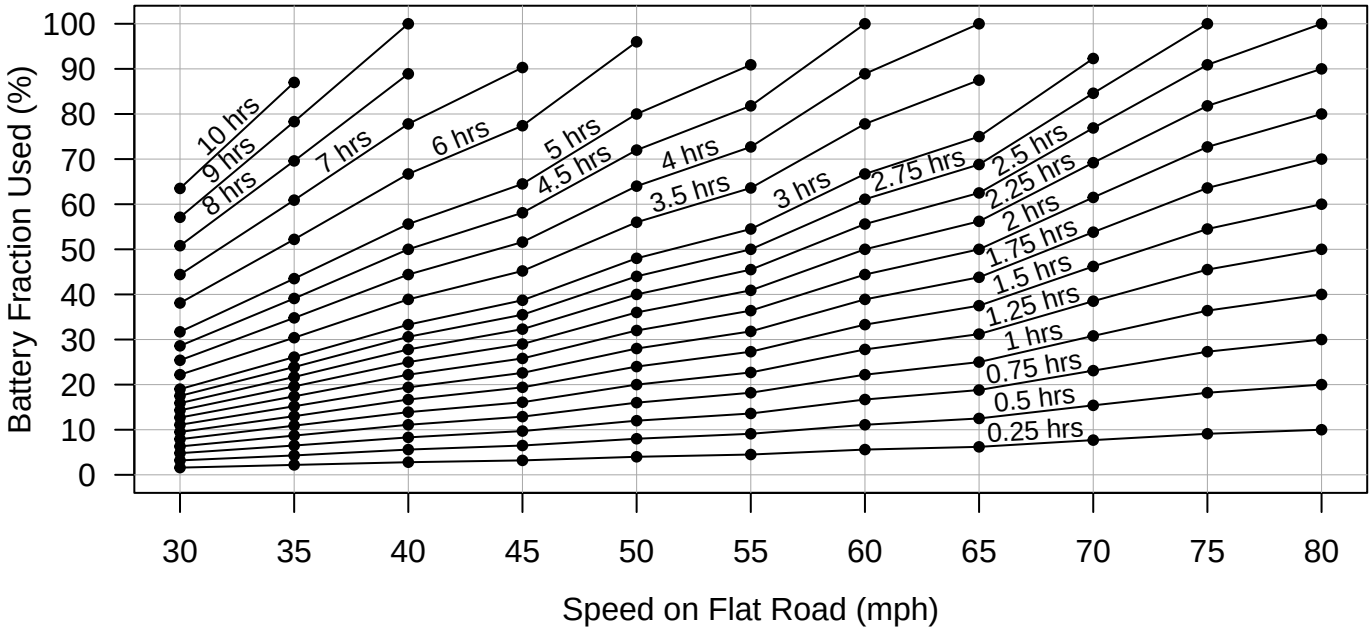
Battery Fraction Used at Speeds/Distances, 2018 Tesla Model 3 Long Range RWD

(assume battery degradation of 12% for capacity of 66 KWh)



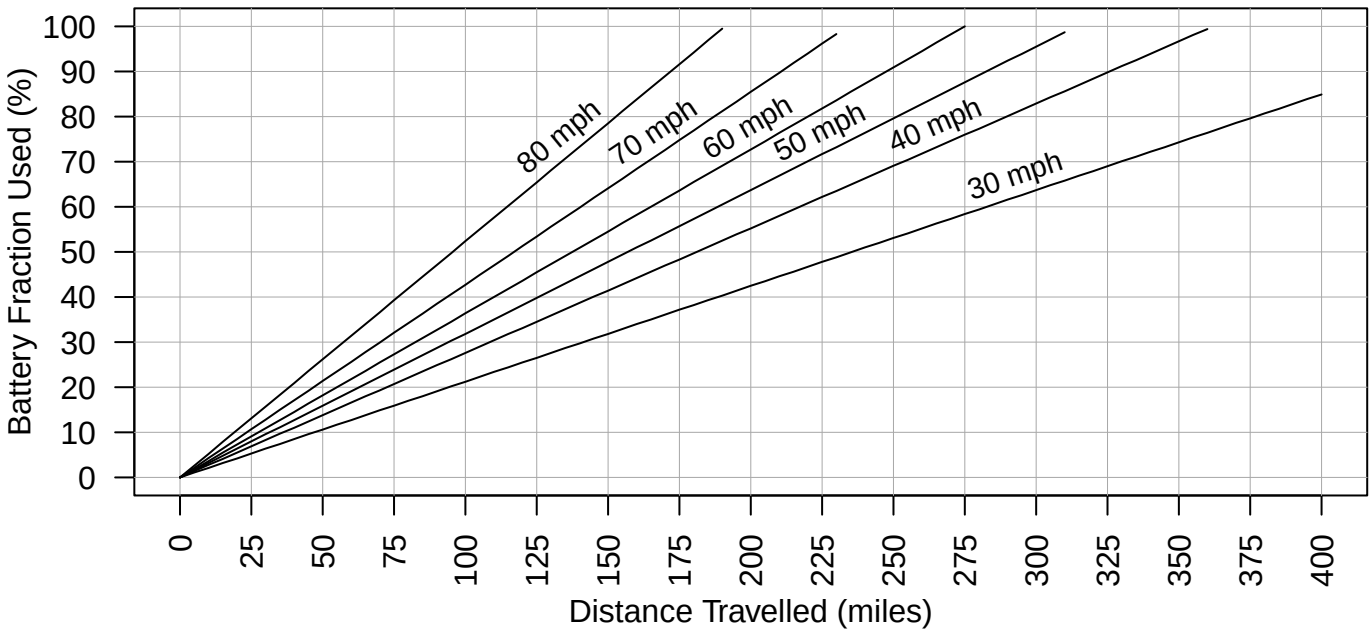
Battery Fraction Used at Speeds/Times, 2018 Tesla Model 3 Long Range RWD

(assume battery degradation of 12% for capacity of 66 KWh)



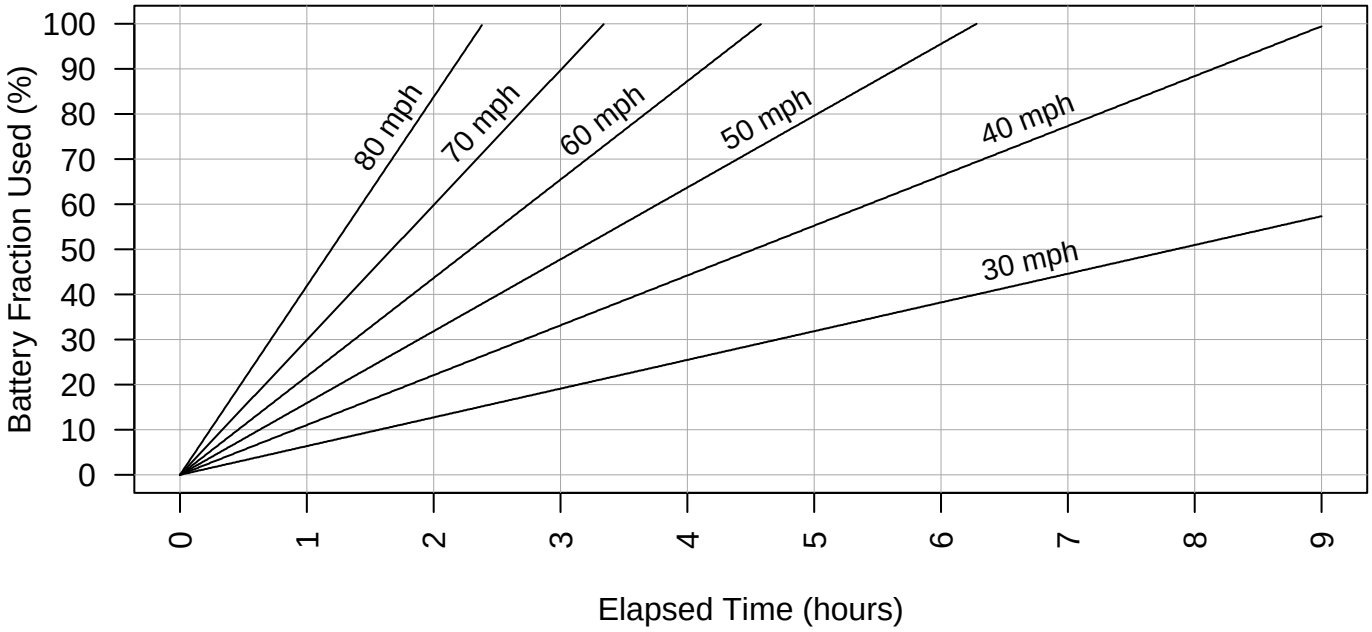
Battery Fraction Used at Distances/Speeds, 2018 Tesla Model 3 Long Range RWD

(assume battery degradation of 12% for capacity of 66 KWh)



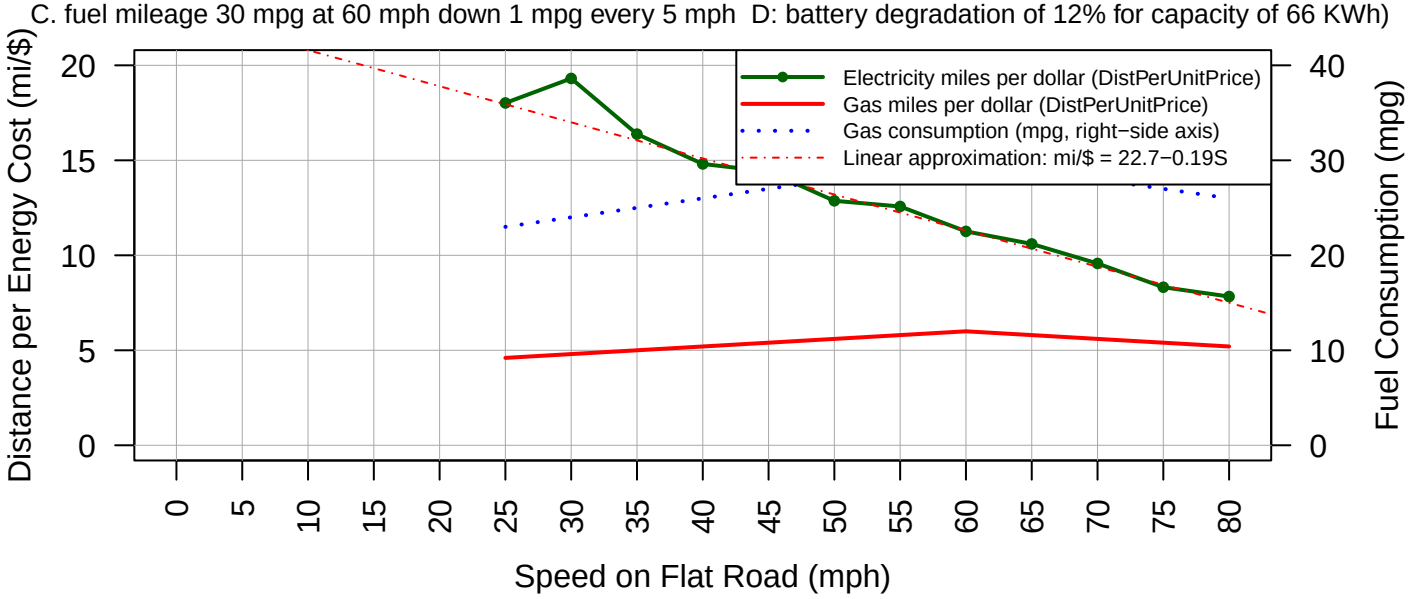
Battery Fraction Used at Times/Speeds, 2018 Tesla Model 3 Long Range RWD

(assume battery degradation of 12% for capacity of 66 KWh)



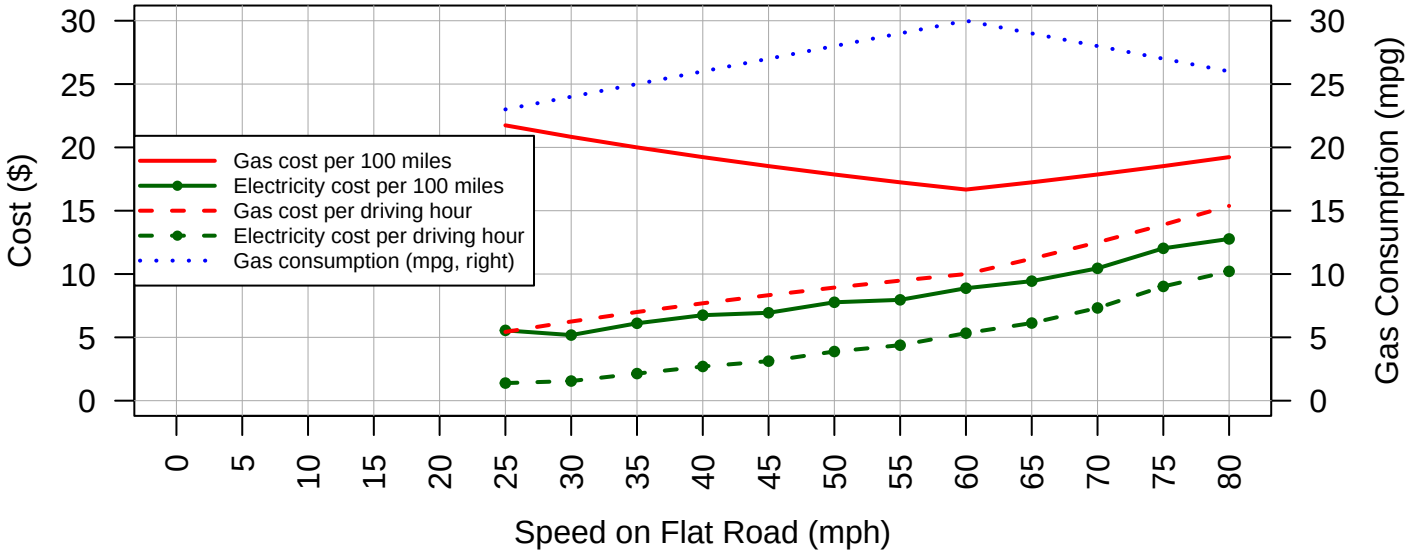
Distance as a Function of Energy Cost, 2018 Tesla Model 3 Long Range RWD

(Assumptions: A: electricity cost $0.37/KWh (charging efficiency excluded) B: gasoline cost $5/gal
C. fuel mileage 30 mpg at 60 mph down 1 mpg every 5 mph D: battery degradation of 12% for capacity of 66 KWh)



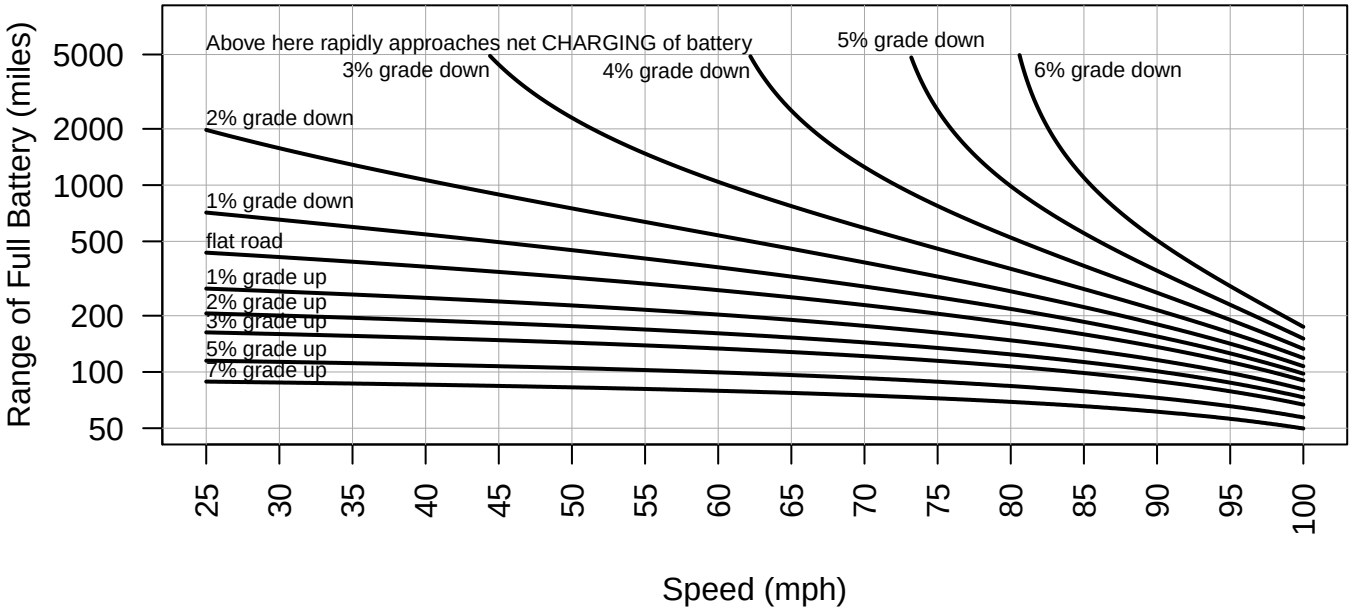
Cost per Distance or Time, 2018 Tesla Model 3 Long Range RWD

(Assumptions: A: electricity cost $0.37/KWh (charging efficiency excluded) B: gasoline cost $5/gal
C. fuel mileage 30 mpg at 60 mph down 1 mpg every 5 mph D: battery degradation of 12% for capacity of 66 KWh)



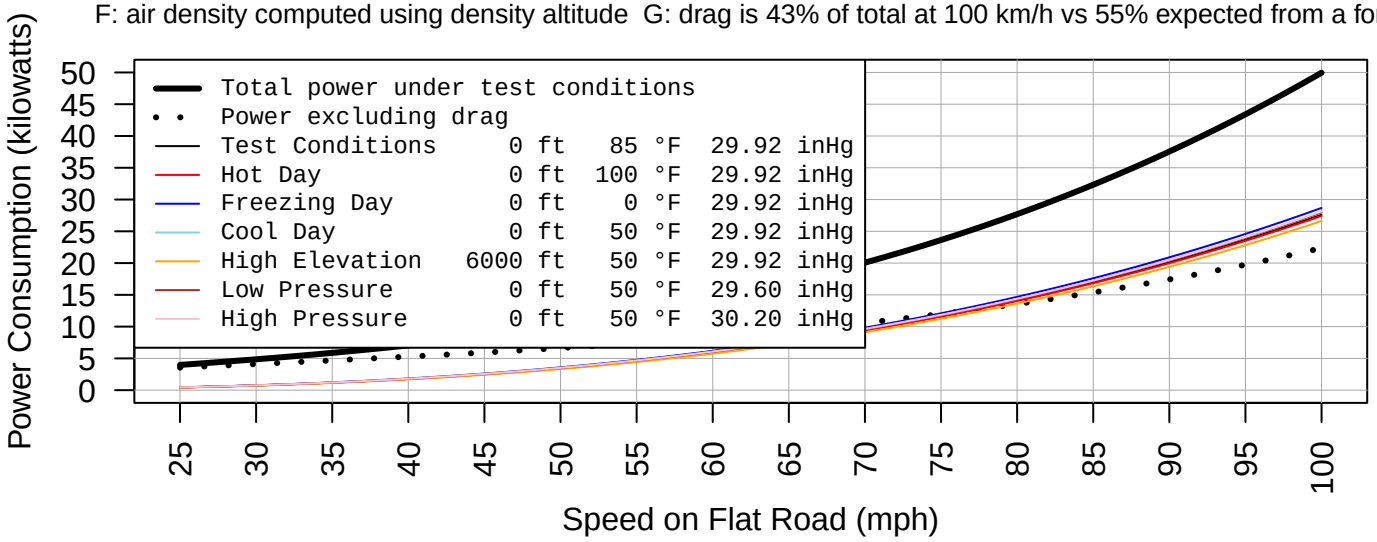
Estimated Range At Uphill/Downhill Grades and Speeds, 2018 Tesla Model 3 Long Range RWD

Assumptions: A: weight 4250 lb (with 250 lb passenger weight) B: regen efficiency 70%
C: battery degradation 12% for capacity of 66 KWh D: flat road linear range approximation = R = 550−4.6S



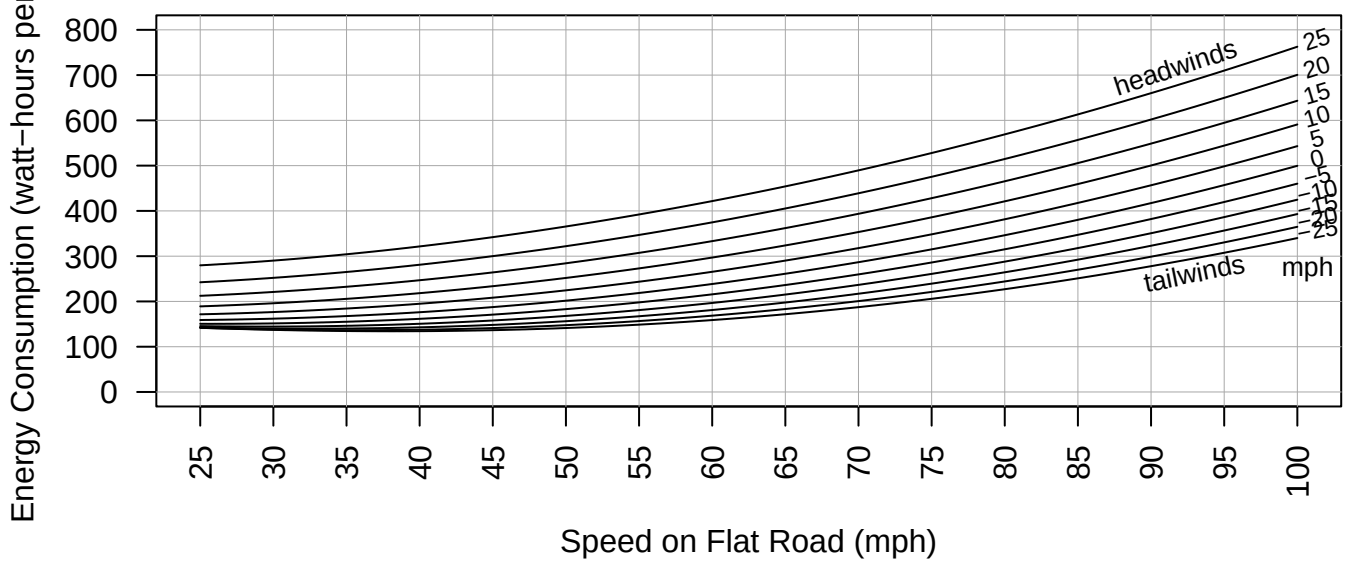
Drag Power Consumption at Speeds, 2018 Tesla Model 3 Long Range RWD

Assumptions: A: weight 4250 lb (with 250 lb passenger weight) B: drag coefficient 0.23 C: frontal area 2.22 sq. m.
D: power approximation P = ((57S−2600)S/10000+19)S/100−4 E: test conditions temp and barometer estimated post−facto
F: air density computed using density altitude G: drag is 43% of total at 100 km/h vs 55% expected from a forum



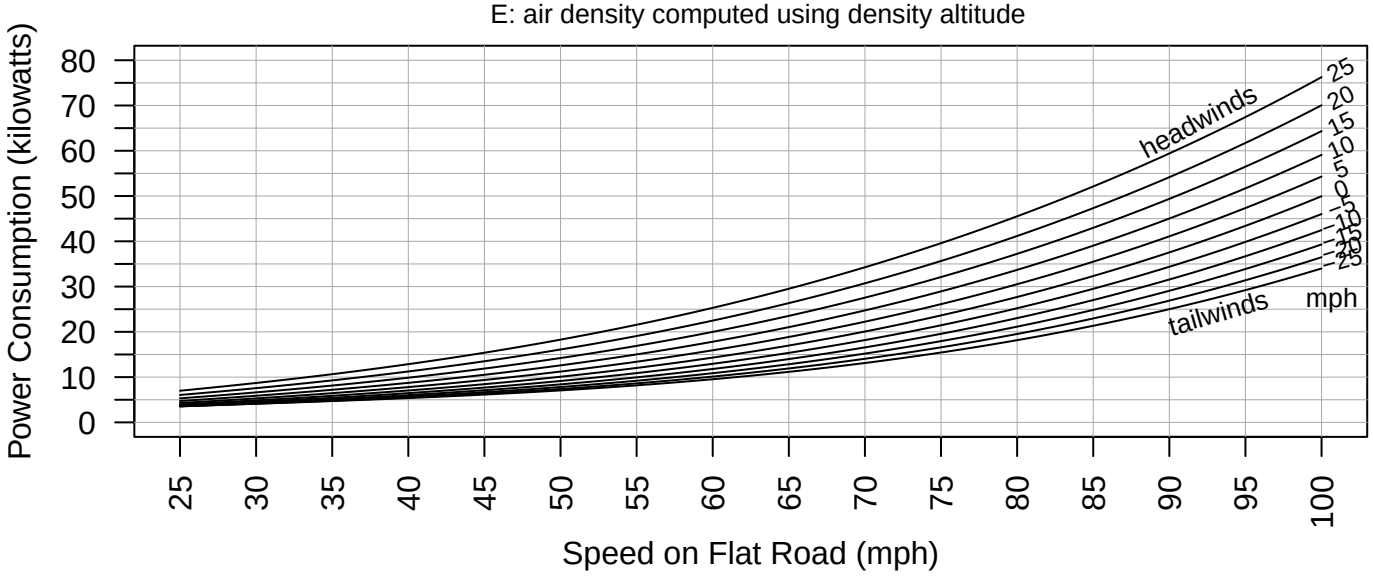
Energy Consumption at Car and Wind Speeds, 2018 Tesla Model 3 Long Range RWD

Assumptions: A: weight 4250 lb (with 250 lb passenger weight) B: drag coefficient 0.23 C: frontal area 2.22 sq. m.
D: power approximation P = ((57S−2600)S/10000+19)S/100−4
E: air density computed using density altitude



Power Consumption at Car and Wind Speeds, 2018 Tesla Model 3 Long Range RWD

Assumptions: A: weight 4250 lb (with 250 lb passenger weight) B: drag coefficient 0.23 C: frontal area 2.22 sq. m.
D: power approximation P = ((57S−2600)S/10000+19)S/100−4
E: air density computed using density altitude



Range at Car and Wind Speeds, 2018 Tesla Model 3 Long Range RWD

Assumptions: A: weight 4250 lb (with 250 lb passenger weight) B: drag coefficient 0.23 C: frontal area 2.22 sq. m.
D: power approximation P = ((57S−2600)S/10000+19)S/100−4 E: battery degradation 12% for capacity of 66 KWh
F: air density computed using density altitude