

Vehicle Dynamics and Control – Vertical Dynamics Lab

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Car segment: Sedan Car

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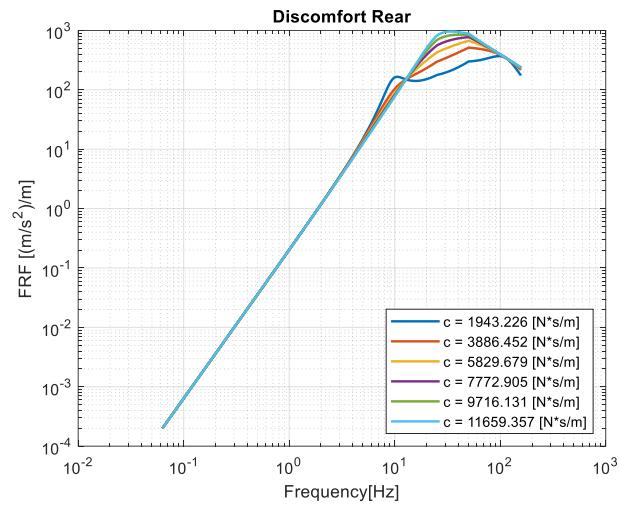
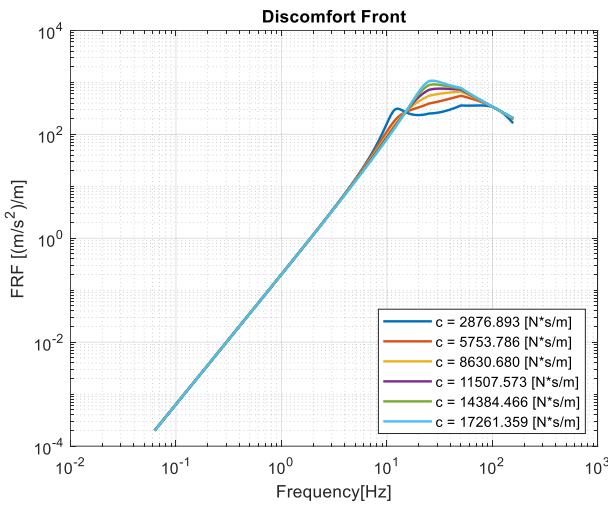
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Damping coefficients

FRFs

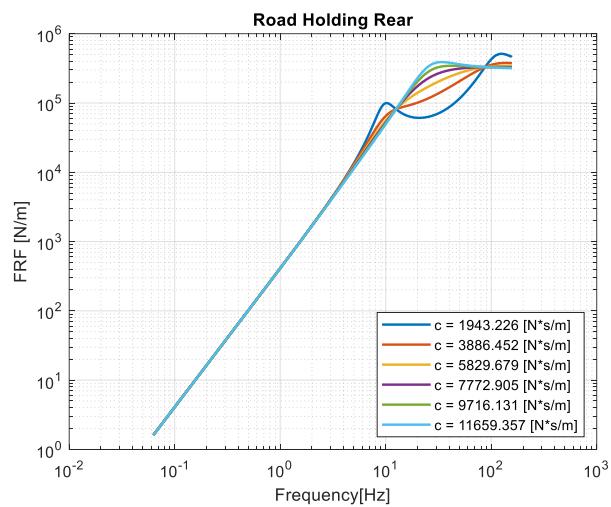
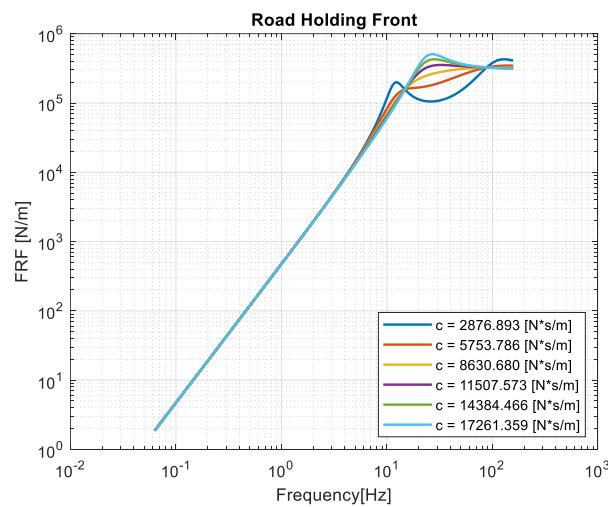
Discomfort

$$\left[\frac{\ddot{Z}_s}{Z_r} = \frac{s^2 Z_s}{Z_r} \right]$$



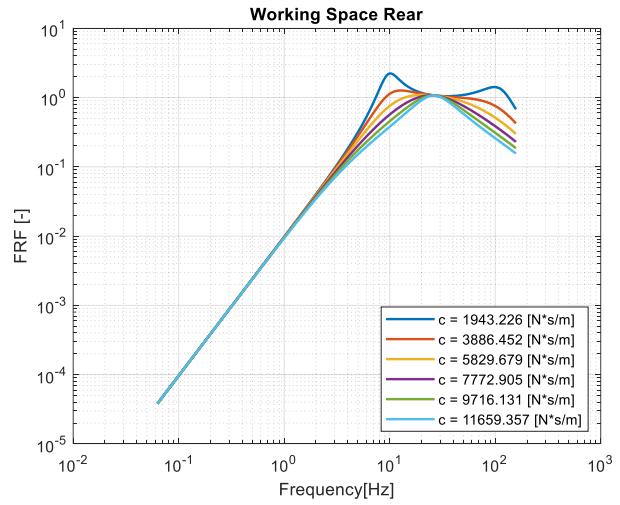
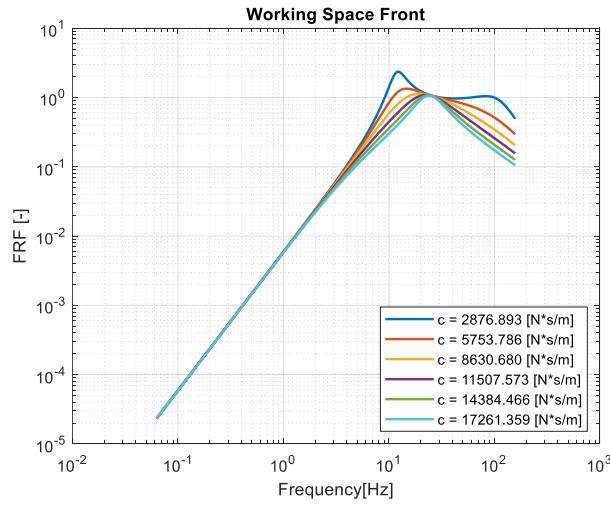
Road holding

$$\left[\frac{F_z}{Z_r} = (c_t s + k_t) \left(\frac{Z_u}{Z_r} - 1 \right) \right]$$



Working space

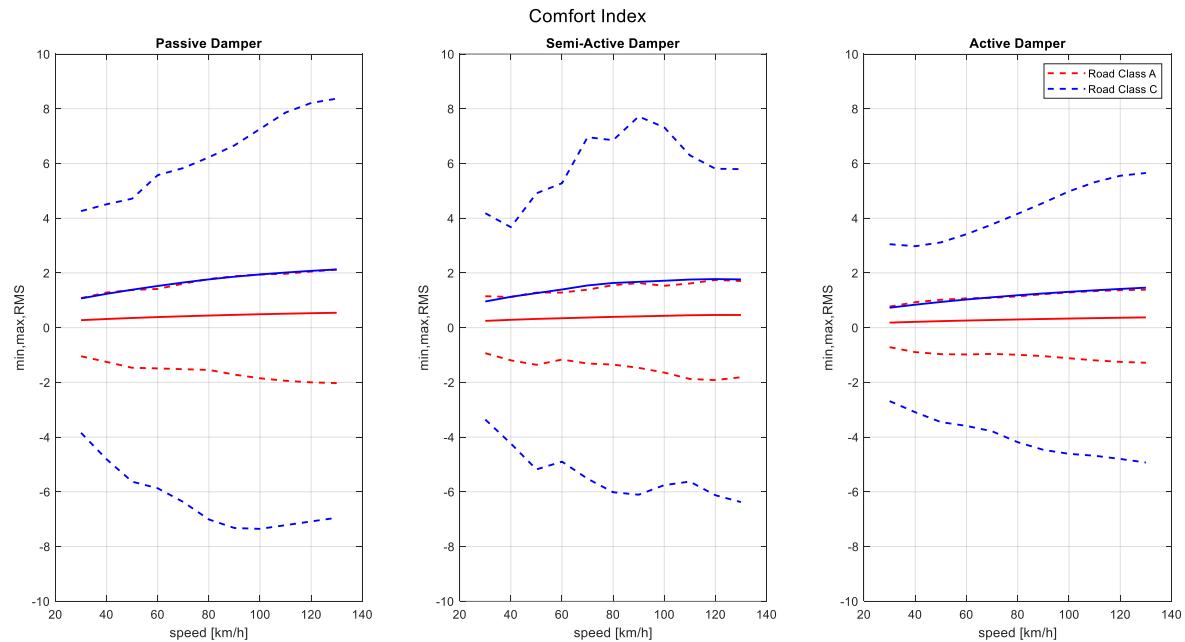
$$\left[\frac{z_s - z_u}{z_r} = \frac{Z_s - Z_u}{Z_r} \right]$$



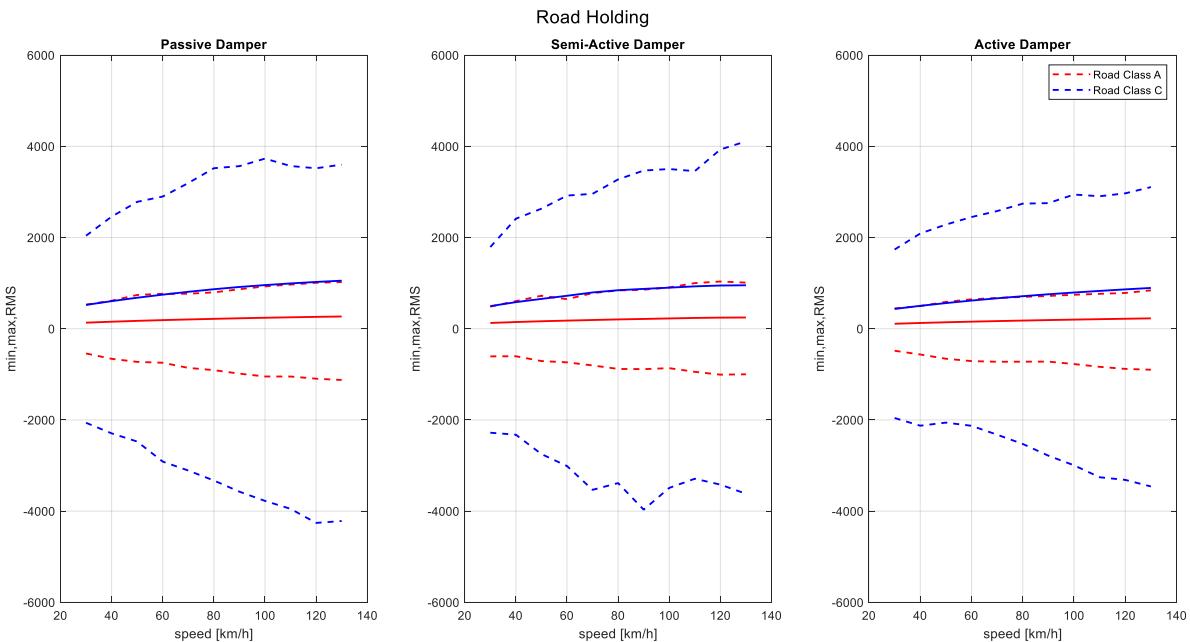
Dynamic simulation

Comparison between road irregularities

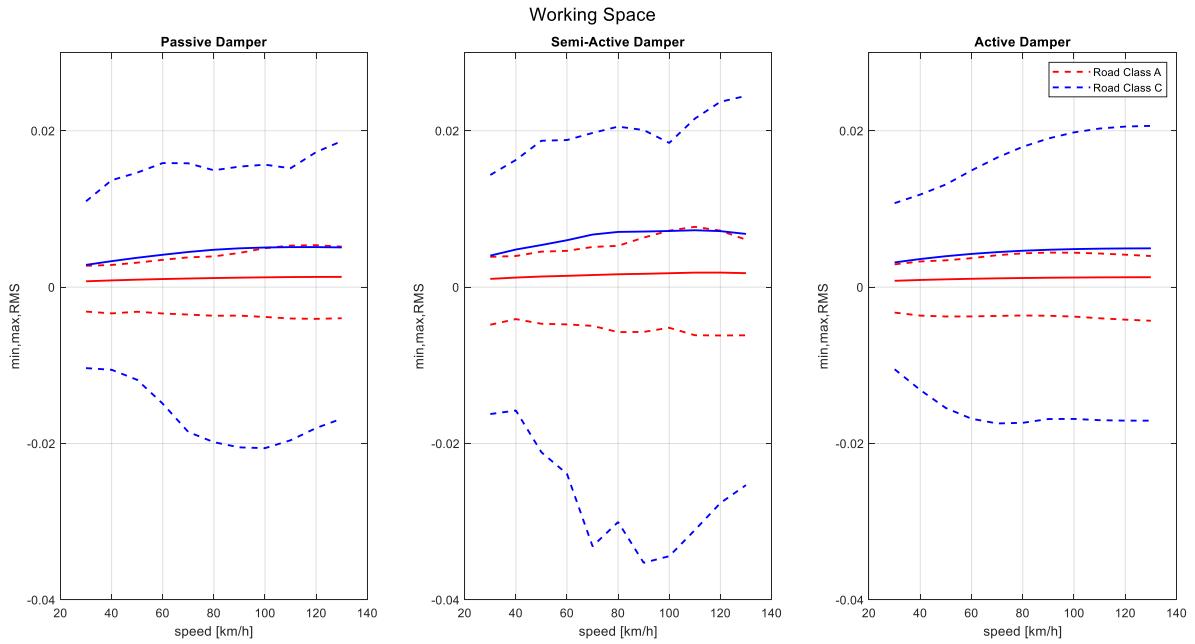
Comfort index



Road holding



Working space



Power dissipated

