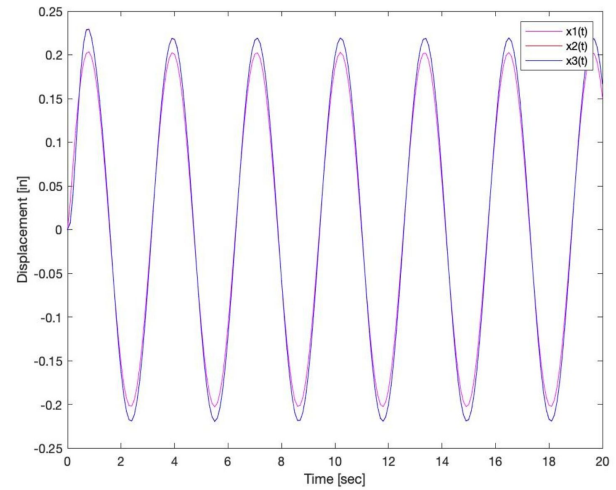
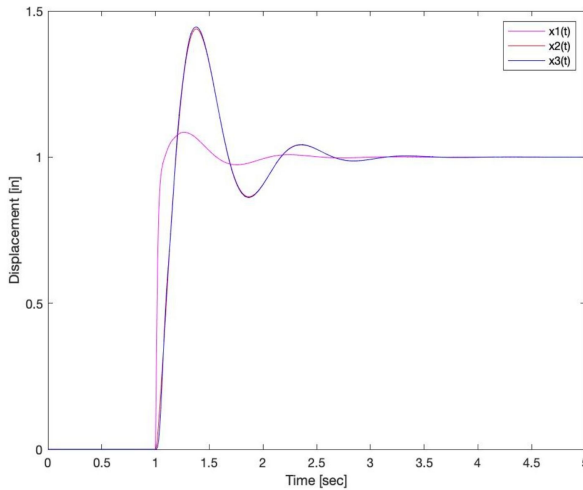
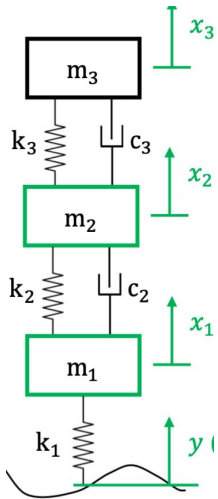


Car Suspension Model: 2010 Toyota Prius



What?

Investigated a three Degrees of Freedom (DOF) quarter-car suspension model of a 2010 Toyota Prius.

Modeled the system including the wheel and axle, car body, and seat-passenger assembly to analyze its dynamic response.

How?

Used Newton's second law of motion to derive dynamic equations and transfer functions.

Applied two different input (forcing) displacements to evaluate their impact on passenger comfort.

Simulated system responses using MATLAB to analyze displacement over time.

Results

Evaluated the effectiveness of the suspension system in minimizing discomfort.

Provided insights into the impact of road excitation on vehicle dynamics and passenger comfort.