

Review of: "Simulation of Control System for a Half-Car Suspension System for Passenger Vehicle Application by Designing an LQR Controller"

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Potential competing interests: No potential competing interests to declare.

This study proposes a 4-DOF half-car active suspension system with an LQR controller, aiming to enhance vehicle handling, ride comfort, and driving dynamics. Simulations demonstrate superior performance compared to passive suspension. However, several issues need addressing in this work:

- 1)The paper lacks rigor and adherence to standards, with some formulas containing errors, such as Equation (10);
- 2)The paper has serious formatting issues, including problems with the format of figures and tables. Additionally, there is confusion and lack of clarity in the description of the modeling section;
- 3)Does "passive" control in simulations 6-9 refer to not applying any control input to the system? If so, then the system eventually stabilizes. What is the significance of designing the LQR controller?