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

Ts. Dr. Hamzah Ahmad[1]

1 University Malaysia Pahang

Potential competing interests: No potential competing interests to declare.

Some improvement can be made based on the content.

1. Define clearly what is meant by vehicle handling regulation with some papers cited.
2. Please cite some references saying or reporting that LQR has been used in their paper especially on Active Suspension System.
3. Describe why a static model is being used for analysis purposes instead of the dynamic model. The explanation should also includes to the conditions of the parameter and others that are considered in the paper for verifications purposes.
4. what is the difference between half dynamics and static dynamic model?
5. What measuring unit M stands for in table 2?
6. Define the variables meaning on most of the equations presented in the paper.
7. Highlight main differences of the ASS model to PSS model in 2.1 and 2.2.
8. Define on why LQR is been chosen. The motivation of works for selecting LQR was not properly explained.
9. In results section, it is better to include explanation on why the sinusoidal bump is considered and why only two bumps? What are the bumps characteristics i.e size or height?
10. Define the road roughness based on ISO. Cite references on it.
11. Add assumptions on the tire conditions.
12. Define what is xsr,xsf in figure 6.
13. It was said that the peak is 0.06 m for passive and 0.031 m for LQR. But figure 6 illustrates that for LQR(black colour) has value of 0.43.
14. Most of the figures should be explain clearly on the statement. Refer to each figure when explain the results obtained.
15. Is figure 8 defines the outcomes with LQR for ASS?
16. It was indeed the results show good performance of ASS. The results can be better if was organized by looking on the figures when explaining.
17. The references should be more on updated references.

Overall the content has produced good results but needs more improvements on its presentations.