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

Camilo Oyuela[1]

1 Universidad Tecnológica de Pereira

Potential competing interests: No potential competing interests to declare.

Dear authors, the document provided has important foundations for a good research, however I do not find a new and important contribution in the field, as the LQR control had already been implemented in the reference [2].
However, as a recommendation, understanding the proposed model of the vehicle and the control laws, it is possible to implement different controllers, perhaps non-linear controls, for example.
On the other hand the presented results look good and all your procedure is correct.

Recommendations:
- In Figure 1 name each figure both in the image and in the caption. Example: Fgure 1. a) Model of...; b) FBD....
Be more specific and enlarge the caption of all figures. Also improve the quality of both graphics, make them yourselves in some image editor.

- List all figures

- The figures should contain all the necessary information about the variables and data needed in the document.

- Type the equations better. Some matrices look wrong in the bracket on the right side.
It is recommended to use a specialised text editor, e.g. LaTex.

- When presenting the model in state space and describing the matrices, two matrices are called [G].

- In the state space model, the matrices [C] and [D] are shown, but they are never calculated.

- Equation 10, of the controller, is poorly written.

- In the paragraph following equation 10, they talk about having to calculate a matrix k, they should show the equation of the closed-loop system where this control variable is shown.

- They do not say or show how they obtain the matrix k, they know that it is obtained by solving the Ricatti equation, be more explicit in that part.