

## Peer Review

# Review of: "Can Human Drivers and Connected Autonomous Vehicles Co-exist in Lane-Free Traffic? A Microscopic Simulation Perspective"

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This study discussed the influence of human drivers in the fully connected lane-free traffic environment and developed a novel adaptive potential line controller to improve traffic capacity. Here are the following comments.

1. The terminology of connected and automated vehicle (CAV) was inconsistent. On Page 4, Line 7, the authors used autonomous vehicle (AV) to describe the non-human-driven vehicle, while in the following paragraph, CAV was also applied. The definition of CAV was not clear.
2. The contribution of this study should be clarified.
3. It would be better to change the title of Section 2.3 from "Potential Lines Controller for LFT" to "LFT controller for CAVs."
4. On Page 9, Line 7, the author noted that each car occupied one strip. However, the width of one strip is 0.1m, and the minimal width of a simulated car is 1.1m. Does that mean that one car may occupy not only one strip?
5. The reason for adding artificial force into the calculation of acceleration should be explained. In Eq. (8), it can be found that when the CAVs are closer to the front vehicle, the higher the artificial force is. While in Eq. (9)-(10), such a rule would push the CAVs to accelerate when they are closer to the leader vehicle, which might be opposed to the general assumption of car-following models.
6. In Figure 9, the range of longitudinal position should be given.

## **Declarations**

**Potential competing interests:** No potential competing interests to declare.