European Transport Research Review

CORRECTION

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Correction to: The impact of driving homogeneity due to automation and cooperation of vehicles on uphill freeway sections

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In the original publication of this article [1], the whole Abstract section is revised as below. This is an error caused during the production stage.

Abstract

Background: This work presents a microsimulation study on the topic on an uphill network, regarding the potential impact of AVs and Cooperative-AVs (Coop-AVs or CAVs), vehicles able to cooperate with the infrastructure. The novelty of the proposed approach is that the simulation of all vehicles is performed with a common hybrid car-following model that takes explicitly into account the variability in the vehicle dynamics and the driving behaviors.

Methods: Simulation of longitudinal movement of the individual vehicles is performed with a common hybrid car-following model that takes explicitly into account the variability in the vehicle dynamics and the driving behaviors. Different homogeneity levels in the vehicles and drivers are tested, while the cooperation is explicitly assessed by proposing a realistic Vehicle to Infrastructure (V2I) logic. Possible reduction in the response times of the vehicles is also studied.

Results: Results with more homogenous vehicle movements have more consistent performance in terms of traffic flow, that is independent of the order that the vehicles enter the network. Finally, the cooperation with the infrastructure can limit high variations in the vehicles' accelerations and thus potential traffic jams.

Conclusions: Homogenized flows can mitigate or even solve traffic-related problems related to the variability in driving behaviors, such as bottlenecks and stop-and-go waves.

Keywords: Vehicle to Infrastructure, Automated Vehicles, Vehicle Dynamics, Traffic simulation, Driving behavior, Traffic Flow

In addition, the last paragraph in the section "**5 Conclusions**" should be revised to:

In future work, the present work will be conducted with the extended version of the MFC model for electric powertrains (He et al. 2020), since electrified vehicle have different dynamics. A publicly available library of the MFC model can be found online (https://pypi.org/project/co2mpas-driver/). Additionally, it would be interesting to validate the above-mentioned observations in a more realistic network cross-validating the results here using additional car-following models, where their free-flow part will be substituted by the proposed MFC model. Furthermore, it would be interesting to understand how different gradients or type of perturbations affect the magnitude of the impact that homogeneity has on traffic flow. Finally, further and more systematic

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assessment of the capability of such models to reproduce empirical observation is necessary.

New reference: He, Y., Makridis, M., Mattas, K., Fontaras, G., Ciuffo, B., Xu, H.: "Enhanced MFC: Introducing Dynamics of Electrified Vehicles for Free Flow Microsimulation Modeling" to appear, Transportation Research Record, March 2020.

The original article has been updated.

The authors sincerely apologize for the inconvenience caused to the readers.

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1. Makridis, et al. (2020). *European Transport Research Review, 12*, 15. https://doi.org/10.1186/s12544-020-00407-9.