

Influence of Behavioural Model Formulation on Surrogate Safety Measures in Traffic Microsimulation

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Influence of Behavioral Model Formulation on Surrogate Safety Measures in Traffic Microsimulation

TRBAM-23-01695, Poster Session 3214 Tuesday, January 10 6:00 PM- 7:30 PM ET

THE AUTHORS

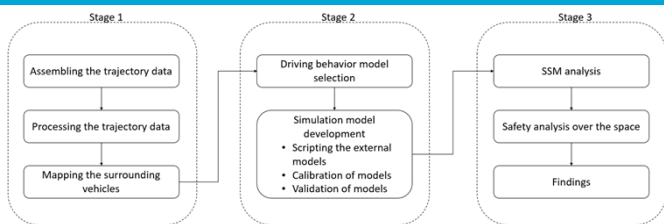
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The main aim of this study is to investigate the influence of different behavioral models' formulations on the correlation between simulated and empirical surrogate safety measures' outcomes. The results show that, regardless of the behavioral model formulations used, the number of simulated traffic conflicts is overestimated.

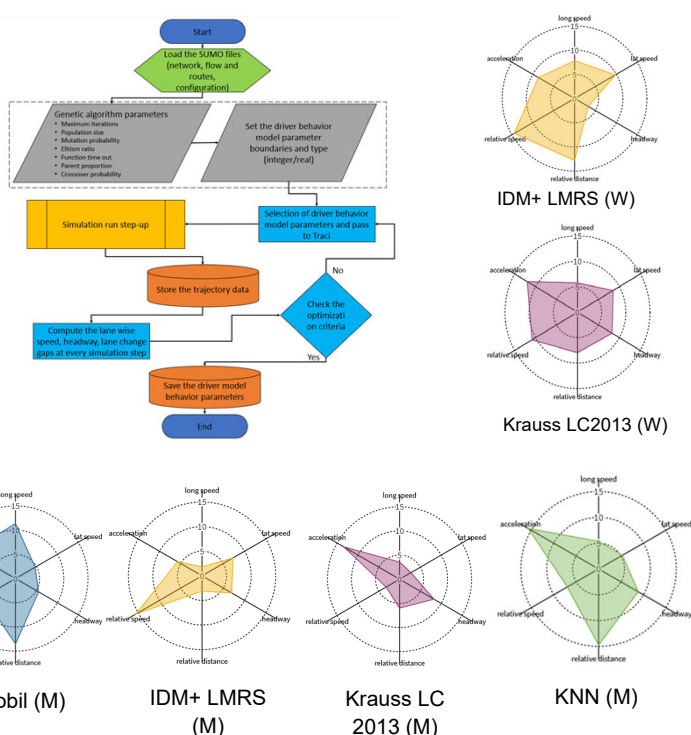
Research methodology



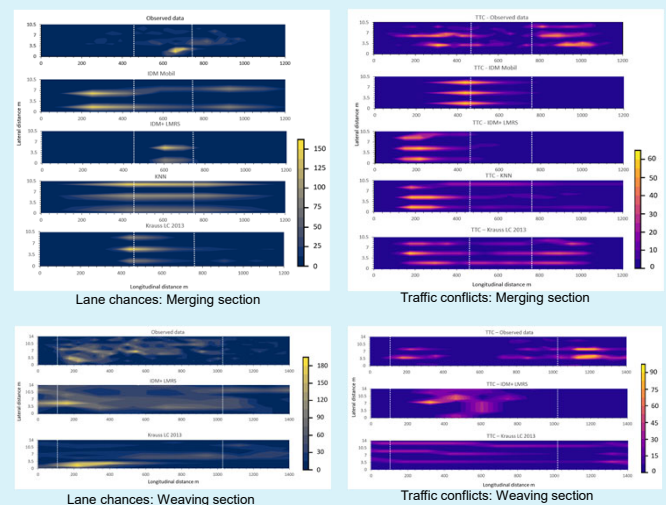
Driving Behavioural models & Surrogate Safety measures

- IDM and Mobil
- IDM+ and LMRS
- KNN
- Krauss and LC 2013
- TTC
- PET
- DRAC
- PSD
- MTTC
- DSS

Simulation Model - Calibration & Validation



Lane Change and Conflict Analysis



Discussion & Conclusions

- Driving behavior models' formulations influence the simulated behavior dynamics. Furthermore, the nature of SSM is found to play a massive role in identifying the conflicts.
- IDM+ with LMRS and Krauss with LC 2013 models tend to perform better than instantaneous IDM Mobil and KNN.
- Microsimulation is not a reliable option for conducting the location-based safety analysis in the present context. It will be handy in judging the safety at an aggregate level.