Committee on Traffic Flow Theory and Characteristics
(TRB ACP50)

ACC Webinar Series

We are proud to announce our 13rd webinar in the ACC Webinar Series:

"Understanding and Modeling Traffic Flow in Era of Increasingly Automated Vehicles"

Dr. David Kan,
Assistant Professor, Florida Atlantic University

Friday, Mar 4th, 2022 --- 10:00 AM (EDT)

(3 PM for London; 4 PM for Zurich, Paris, Rome, Amsterdam…; 11 PM for Beijing)
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ABSTRACT
Automated Vehicles (AVs) have been highly anticipated as they promise to potentially reduce congestion by improving capacity. While fully automated vehicles may take decades to become commercially available and eventually reach a mass market adoption, most mainstream new vehicles sold today are partially automated via Adaptive Cruise Control (ACC). ACC automatically maintains a desired speed and safe following distance with the preceding vehicle based on measurements from on-board sensors. The market penetration of ACC is expected to increase in the coming years. Therefore, understanding the car following behavior of ACC vehicles is crucial to modeling traffic flow in preparation for prospective analysis and developing traffic control strategies in scenarios such as freeway bottlenecks and arterials with signalized intersections. Over 20,000 miles of field experiments covering both freeway and arterial traffic, interaction with human drivers, etc. have been conducted by Florida Atlantic University (FAU) and a microscopic car following model has been developed. Contrary to previously held expectations, vehicle automation could exacerbate congestion when compared with human drivers. However, preliminary experiments suggest that ACC with electric powertrain could mitigate the negative impact on congestion.

BIOGRAPHY

Dr. David Kan is an Assistant Professor in Civil Engineering at Florida Atlantic University. He received his M.S. in 2014 and Ph.D. in 2017 in Civil Engineering from University of California Berkeley. He obtained his B.S. in Civil Engineering from University of Illinois Urbana Champaign in 2013. Prior to joining Florida Atlantic University in Fall 2019, he had been a lecturer and a postdoctoral researcher at University of California Berkeley. His research focuses on traffic operations, intelligent transportation systems, and connected and automated vehicles, and he currently leads a research group with three test vehicles and has conducted 20,000 miles of field experiments using these vehicles.