



Committee on Traffic Flow Theory and Characteristics (ACP50)

TFTC General Webinar Series : 2023

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Reimagining Traffic in the Era of Increasingly Automated Electric Vehicles (EVs)

Mar. 24th (Fri) @ 9 AM EDT

When will it be for me? → [Check it here](#)

Dr. David Kan

*Assistant Professor,
Florida Atlantic University*



Abstract

Vehicle automation has been highly anticipated as it promises to potentially reduce congestion and improve highway capacity. In fact, most new vehicles sold today are partially automated via Adaptive Cruise Control (ACC). Contrary to previous expectations, microscopic models and simulations developed based on trajectory data obtained from over 22,000 miles of field experiments suggest that ACC could exacerbate congestion. Fortunately, when ACC is paired with electric powertrain, the instantaneous peak torque and strong regenerative braking of the electric motor could help mitigate the negative impact of ACC and even deliver improved capacity. This has been demonstrated by recent field experiments that generated more than 3000 miles of trajectory data, using mainstream electric vehicles equipped with ACC. Proper traffic control and management could utilize the capacity enhancing characteristics of electric vehicles, to mitigate congestion, even at lower rates of electric vehicle adoption.

Biography

Dr. Kan is an assistant professor at Florida Atlantic University (FAU). Prior to joining FAU in 2019, he had been a lecturer and postdoc at UC Berkeley, where he received his PhD in transportation engineering. Dr. Kan has rich experience in empirical research related to advanced driver assistance systems (ADAS) and vehicle automation and offers a unique perspective on the potential opportunities of electric vehicles.