Committee on Traffic Flow Theory and Characteristics
(TRB ACP50)

ACC Webinar Series

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

"Reaction times in ACC car-following experiments: comparison between datasets and determination methods"

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Thursday, July 29th, 2021 --- 11:00 AM (EDT)
BlueJeans: https://bluejeans.com/1280718337

(NOTE: You do not need to install the BlueJeans app, just click and join with browser.)

ABSTRACT
Reaction time is the key for an efficient future mixed traffic containing both human-driven vehicles and Automated Cruise Control vehicles. Thanks to colleagues' efforts and generosity we have access to ACC car-following experiments data. This data was collected in Europe (M. Makridis' s team) and Florida (XP Li's team) in specific experiments deployed in test roads and open roads. In total, we have access to more than 14 hours of 10 Hz GPS data with the position and speed of the conventional leader (assigned to successive plateaus of speeds) and the ACC follower.
In the literature, one can find various determination methods of reaction times: based on the computation of the correlation between time series or based on calibration of various models. We apply those methods to this extensive database and obtain puzzling results: the observed ACC reaction time values are in most cases larger than the one of human-driven vehicles, and the results are significantly different from one method to the next.

BIOGRAPHY

Christine Buisson is a researcher and teacher in traffic flow modeling, observation, and control for about 30 years. Christine is devoting her research to the link between observations and models, with a particular focus on the models' limits exploration. Last two years, she tried to gather open sources data about ACC experiments to make cross-comparisons and contribute to a priori evaluations of the impact their introduction on the human-driven traffic might be.