

Planning, Policy,
and
Programming

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Project Title:
Modeling Multi-Modal Mobility
in a Coupled Morning-Evening
Commute Framework that
considers Deadheading and
Flexible Pooling

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Modeling Multi-Modal Mobility in a Coupled Morning-Evening Commute Framework that considers Deadheading and Flexible Pooling

Developing a Unified Transportation Planning Model

WHAT IS THE NEED?

The rapid rise of e-hailing and e-pooling are transforming urban passenger transportation. The addition of these new mobility services has produced more interactions between these services and the traditional modes, and more complex travel behavior that calls for new modeling tools to properly account for them.

There is a clear need to not only understand the nature and effect of these new mobility services better, but also to understand, model, and study the interactions between the various modes of transportation, and integrate them in a unified transportation planning model that includes morning and evening commutes.

However, there is little research that captures the complex interactions between solo driving, ridesharing, and e-hailing and allow travelers to switch between different transportation modes in a coupled morning-evening commute.

WHAT ARE WE DOING?

The research team will develop the dual network representation of coupled morning-evening; then formulate it under the dual-network representation. They will then develop the solution algorithm. Next, the researchers will estimate the e-hailing deadhead miles. Lastly, they will develop the case study, and finalize the report.



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knowledge that improves
California's transportation system

WHAT IS OUR GOAL?

The goal is to develop a general modeling framework to simultaneously consider the morning and evening commute while accounting for deadhead miles for ride-hailing, and allowing for passengers from different origin/destination pairs to carpool together.

WHAT IS THE BENEFIT?

By analyzing the various factors that affect congestion and the vehicle miles travelled (VMT), the findings can help transportation planners, analysts, and policy makers develop relevant policies to reduce congestion and VMTs in the region.

WHAT IS THE PROGRESS TO DATE?

A kick-off meeting will be held in the near future.

IMAGE

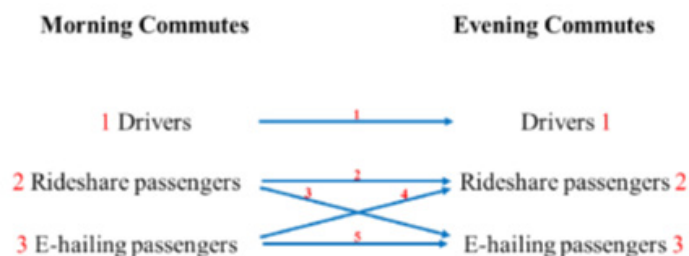


Image: The Different Combination of AM/PM Commuting Modes for a Daily Commute.