

Incentive-based traffic control targetting electric vehicles

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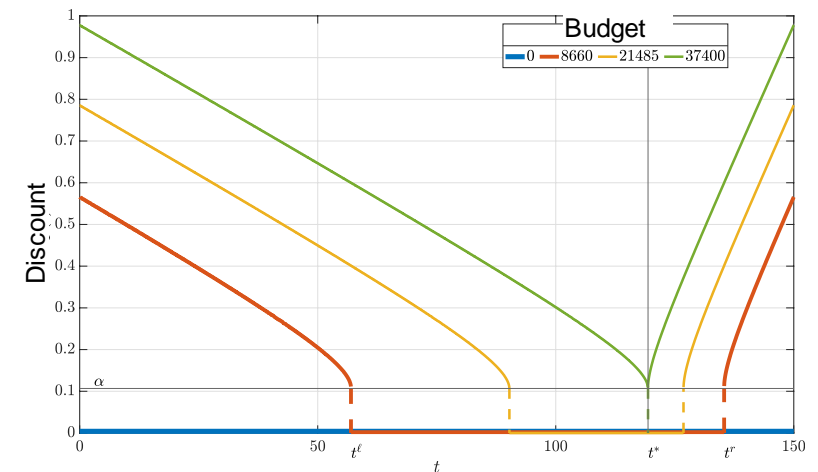
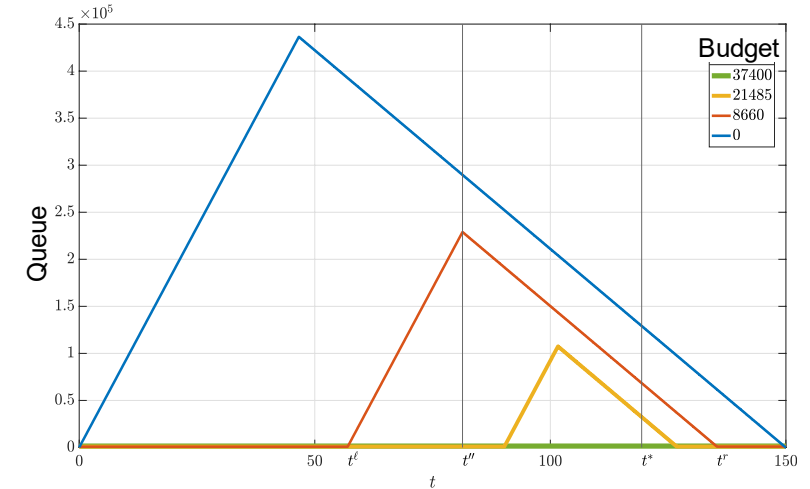
Growing transportation electrification

- Holistic solutions
- Study effects of EVs on traffic

Coupled incentives to ease congestion

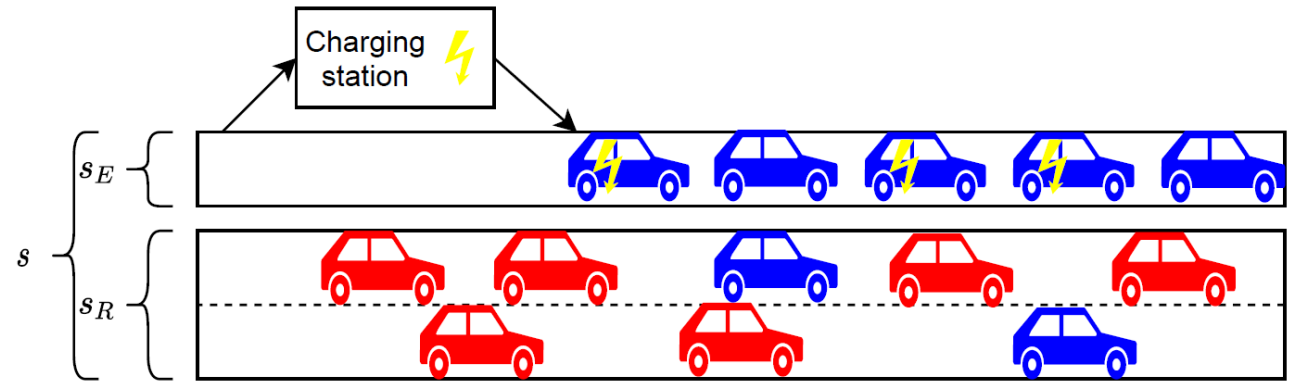
Carlo Cenedese, John Lygeros and Nikolas Geroliminis



- **Electrification of transportation**
↳ electricity @ transportation network
- **Incentive Based Traffic Demand Management**
↳ PEVs → Discounted energy price ⚡
- Higher incentives outside rush hours
- Alleviate congestion → **emerging behaviour**



Line segmentation to

Goal: optimal lane segmentation
→ minimize social costs



- Lane segmentation + EV incentives
 - Reduce congestion and social costs
 - Stimulate shift :  fossil fuelled →  electric vehicles

Current and future works

Works in progress

- CTMs - Effect of stations on traffic
- Model validation via AIMSUN
- Modelling the decision-making process of commuters subject to incentives
- Tradable driving licenses bidding mechanism
- Robust traffic management based on MFD

Future works

- Model coupling between electric and traffic network
- Study drivers sensitivity to policy changes
- Optimal policy design based on multi-level optimization paradigm



Thank you !

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