KTH Transport Platform

“Sustainability important for transport research”

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Passion for Joint Transport Innovation!
Schools and Platforms

KTH Schools
Architecture and the Built Environment
Biotechnology
Computer Science and Engineering
Chemical Engineering
Electrical Engineering
Information and Communications Engineering
Industrial Engineering and Management
Engineering Sciences
Technology and Health

Energy and Climate
Materials
Medical Engineering
ICT
Transport

KTH Platforms
Energy-efficient truck platoons

- Air drag reductions (25% @ 20m & 40% @ 5-10m)
- Potential fuel and CO2 savings up to 15%
- Enabled by sensors, GPS and V2V communication

- Preliminary field test on E4 (Södertälje – Jönköping)
  - 7% fuel savings at 20m distance
Lighweight carbodies

Cross section comparison

Steel Sandwich

Use phase savings:
- 250-300 MWh/year
- 200-800 kSEK/year
  (300000-500000 km/year)

Info:
- 6 car Electrical Multiple Unit
- High-speed traffic (250km/h)
Sustainable traffic management

Optimize urban traffic signal control

Emissions ↓ 10%

Improve other existing traffic operations e.g.

Emissions ↓ 5-10%

Develop green control measures based on new infrastructure, in-vehicle systems etc.

Model

Traffic system

Vehicular emissions

Air quality monitoring

Integrated traffic and environmental impact modeling platform

Xiaoliang Ma
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Improving public transport reliability

Headway variability: 18-25%
Total waiting time: 10%
Crowding: 50%

Stay tuned: new project “impact of better travel reliability”

Oded Cats
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Structural batteries

Could carbon fibre function as a multifunctional electrode for structural lithium-ion batteries?
Congestion Charge Exemption for Green Vehicles: Did it Help or Hurt?

- Analyse driver behaviour before, during and after various policy measures:
  - Purchase rebates, fuel subsidies, reduced registration fees, congestion pricing exemption, reduced parking fees
- Calculate the significance of each policy in a mixture
- Understand wider sustainability implications of specific policies and packages
  - Do some of these have rebound effects on demand?
- Specific Focus:
  - Congestion Charging + Green Vehicle Exemption in Stockholm
Thank you!!

*Passion for Joint Transport Innovation!*

*One stop shop for transport research!*

www.kth.se/transport

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