

18

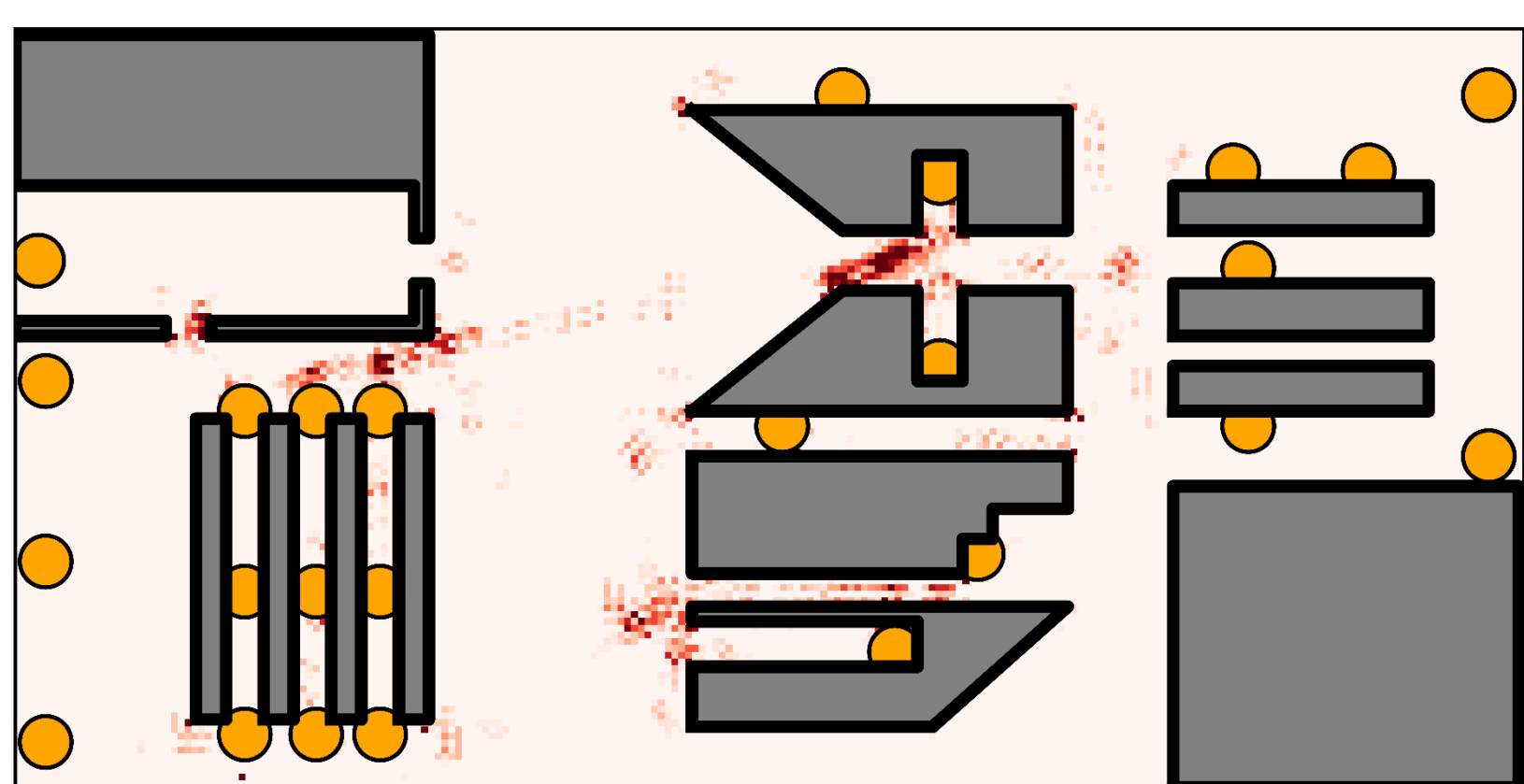
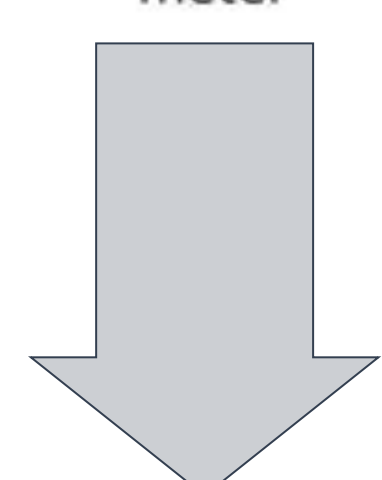
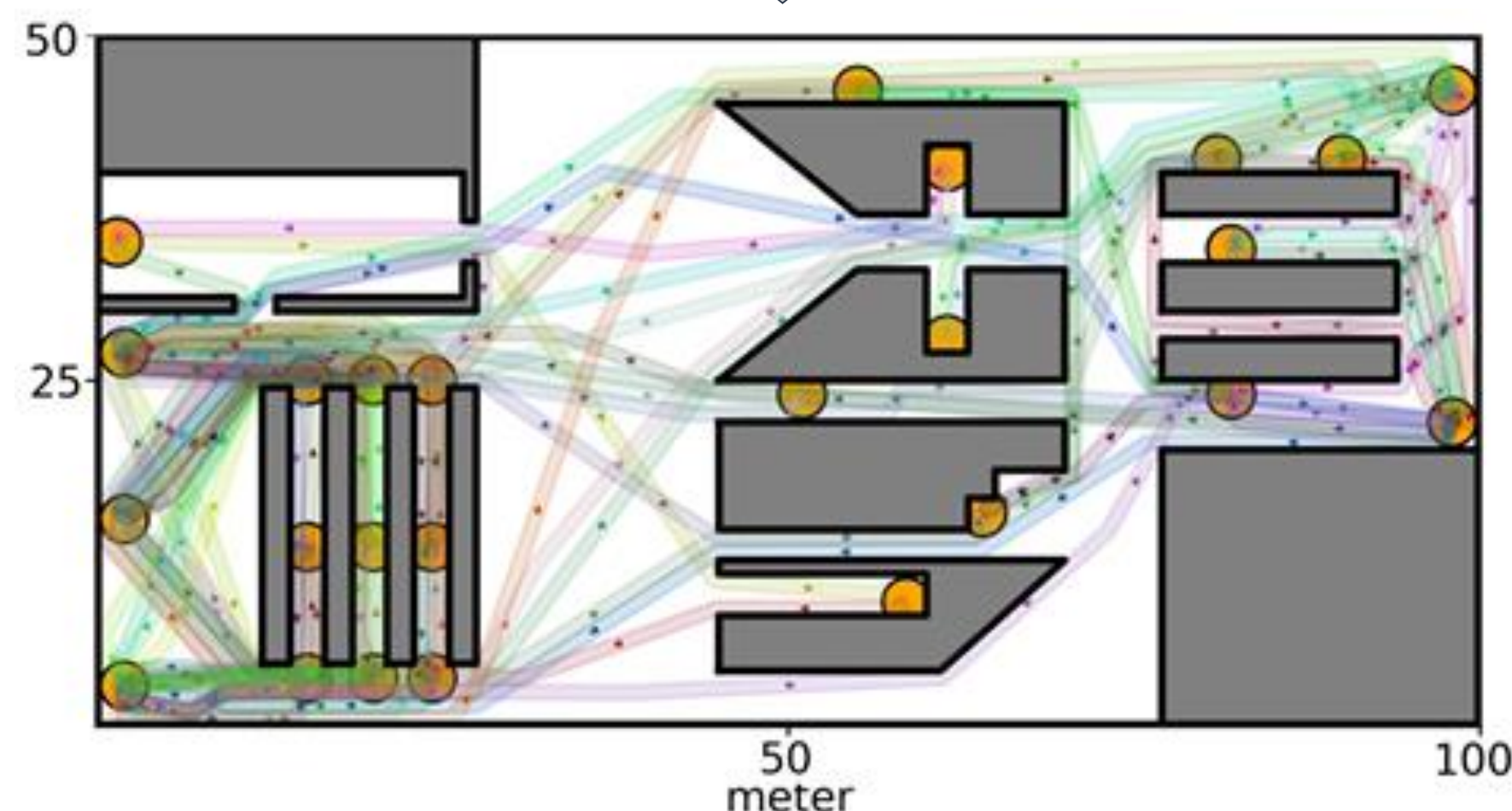
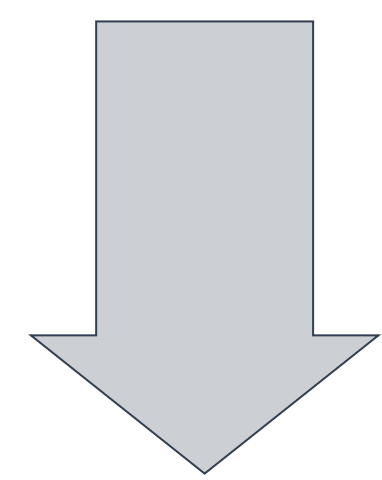
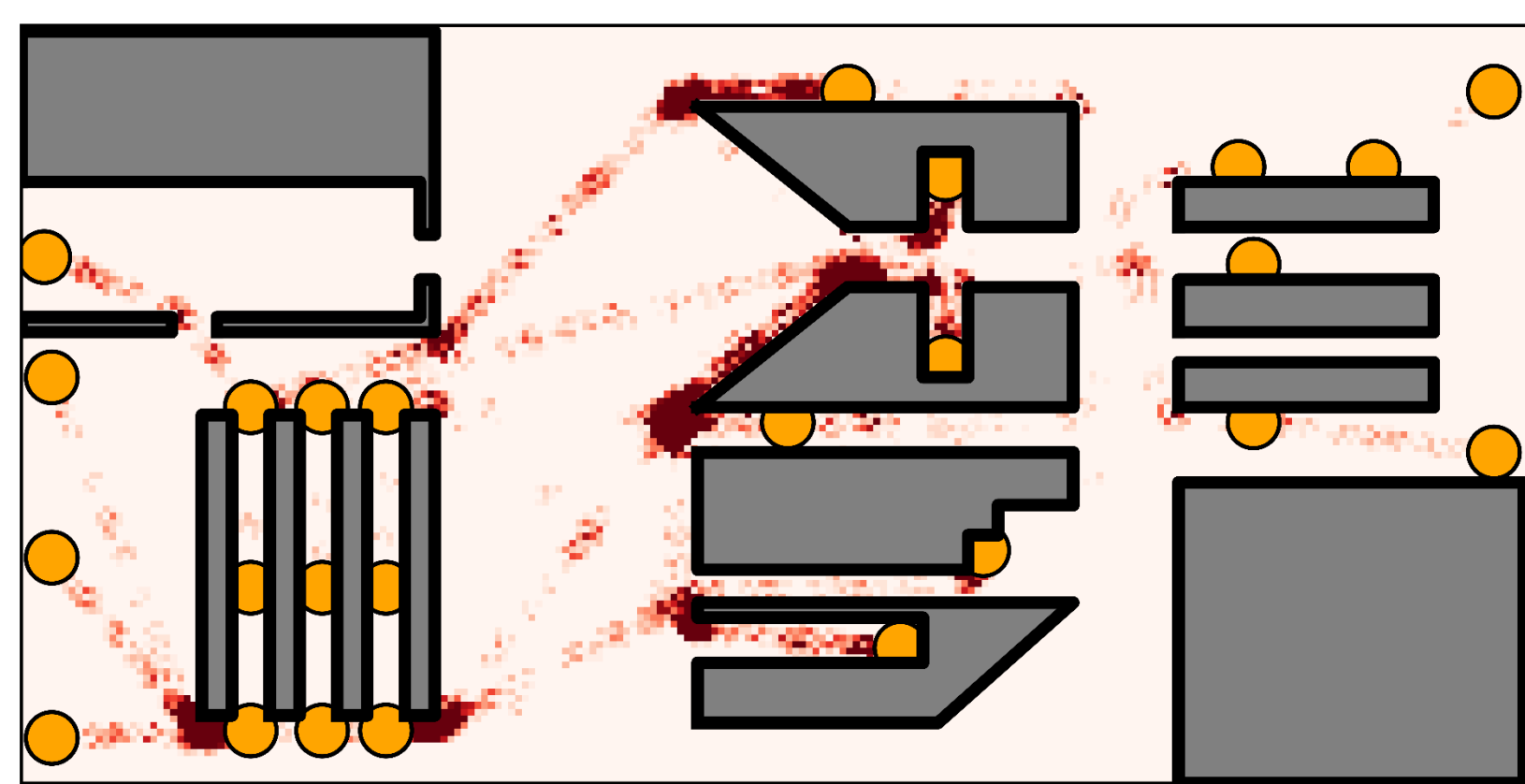
Current Challenges and Approaches in Route Selection of a Fleet of AMR

Thorsten Schmidt, Karl-Benedikt Reith, and Frank Schulze
Technische Universität Dresden



Methodology

from shortest route
with many routing conflicts ...

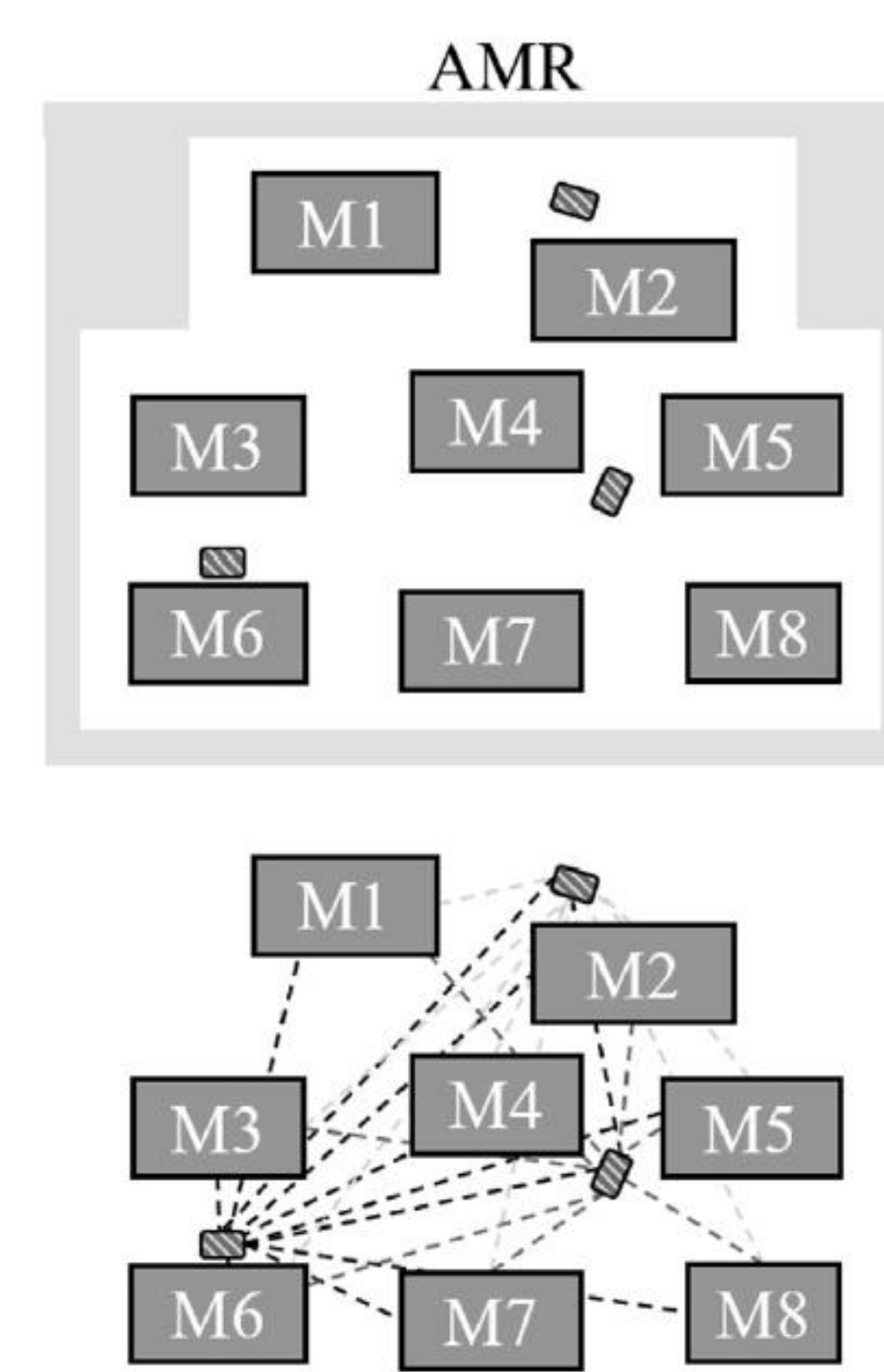


to lane map (*)
... with less routing conflicts

(*) determined offline & globally; minimal lane lengths & overlaps; adapted to layout, fleet size & throughput; AMR can deviate locally

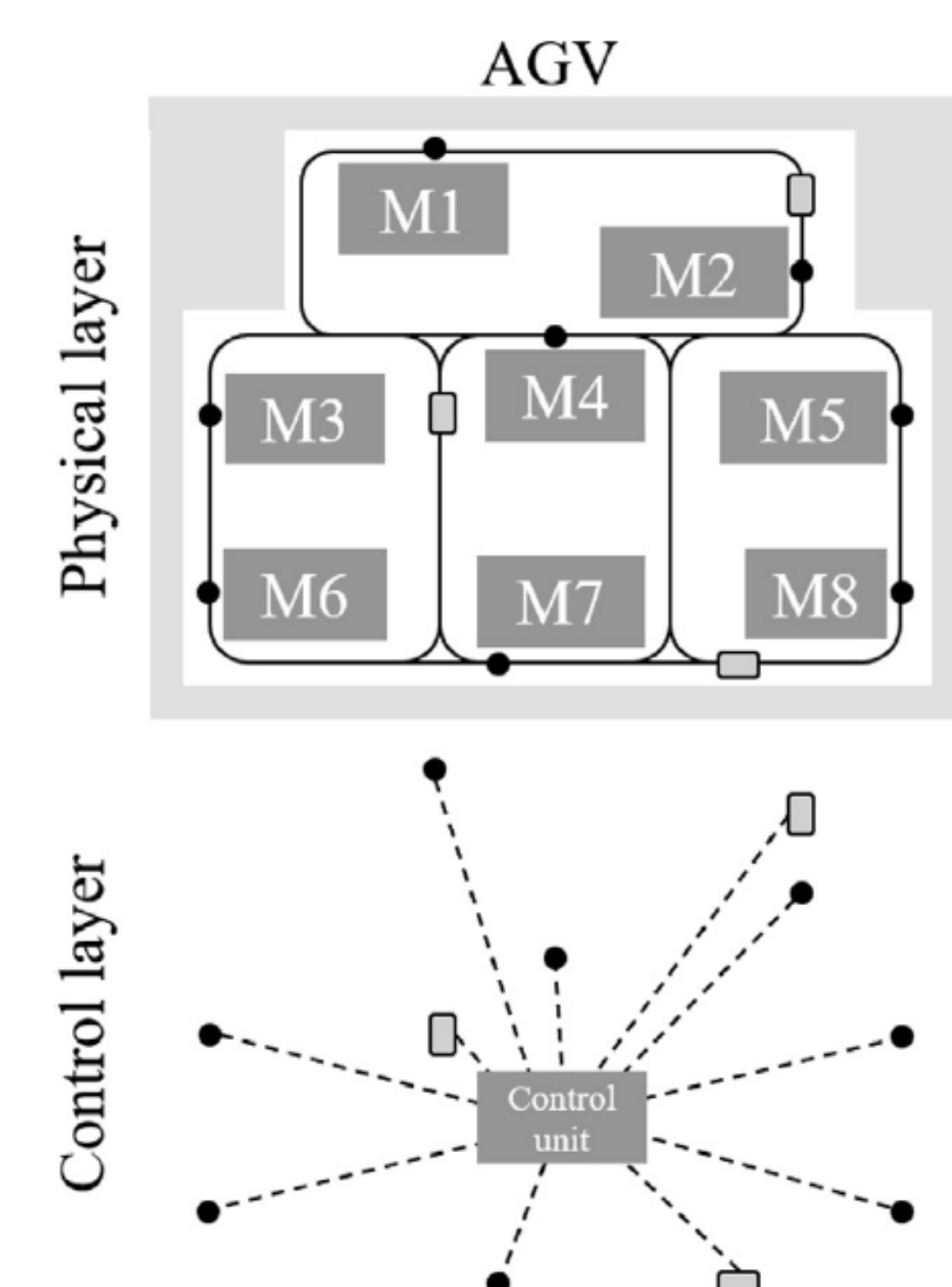
Objective

to AMR



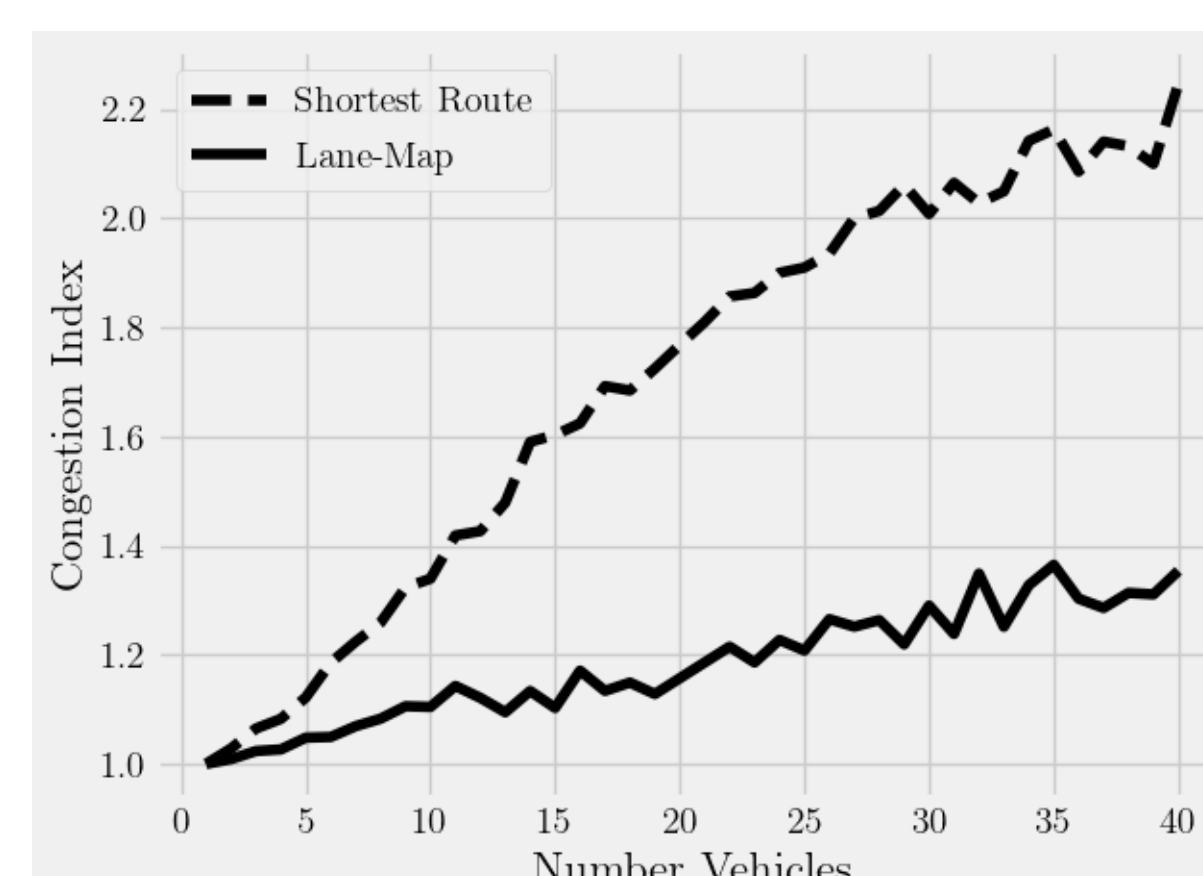
decentralized control,
free navigation

from AGV

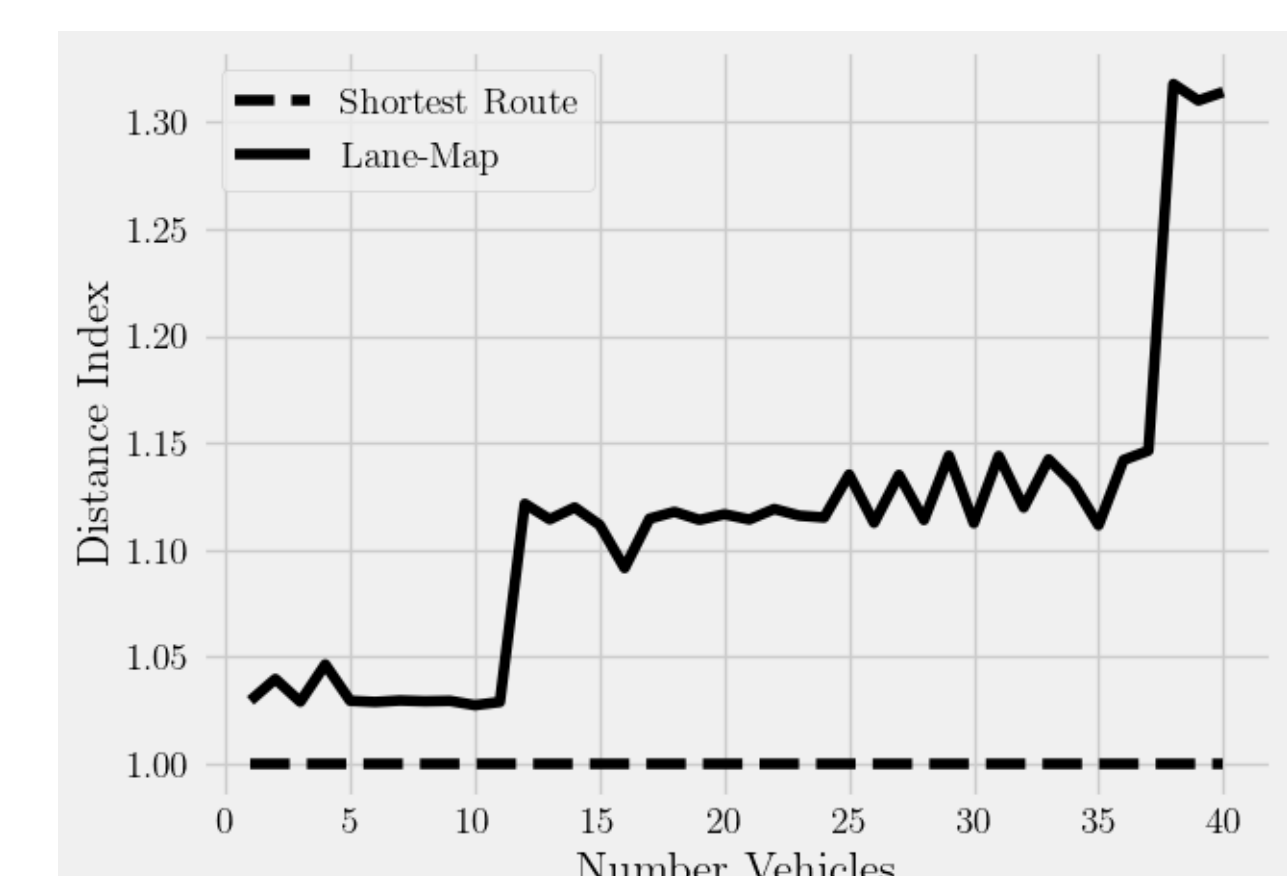


centralized control,
navigation along path

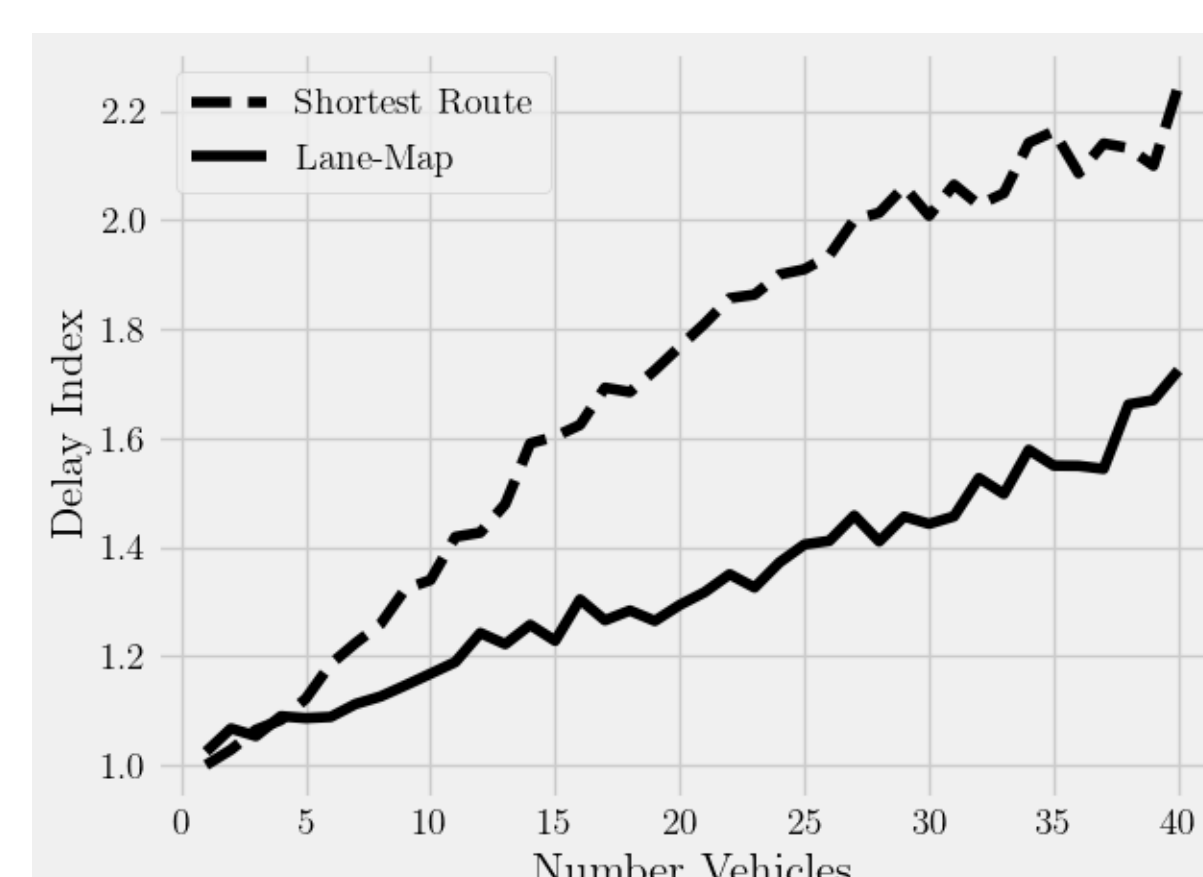
Results



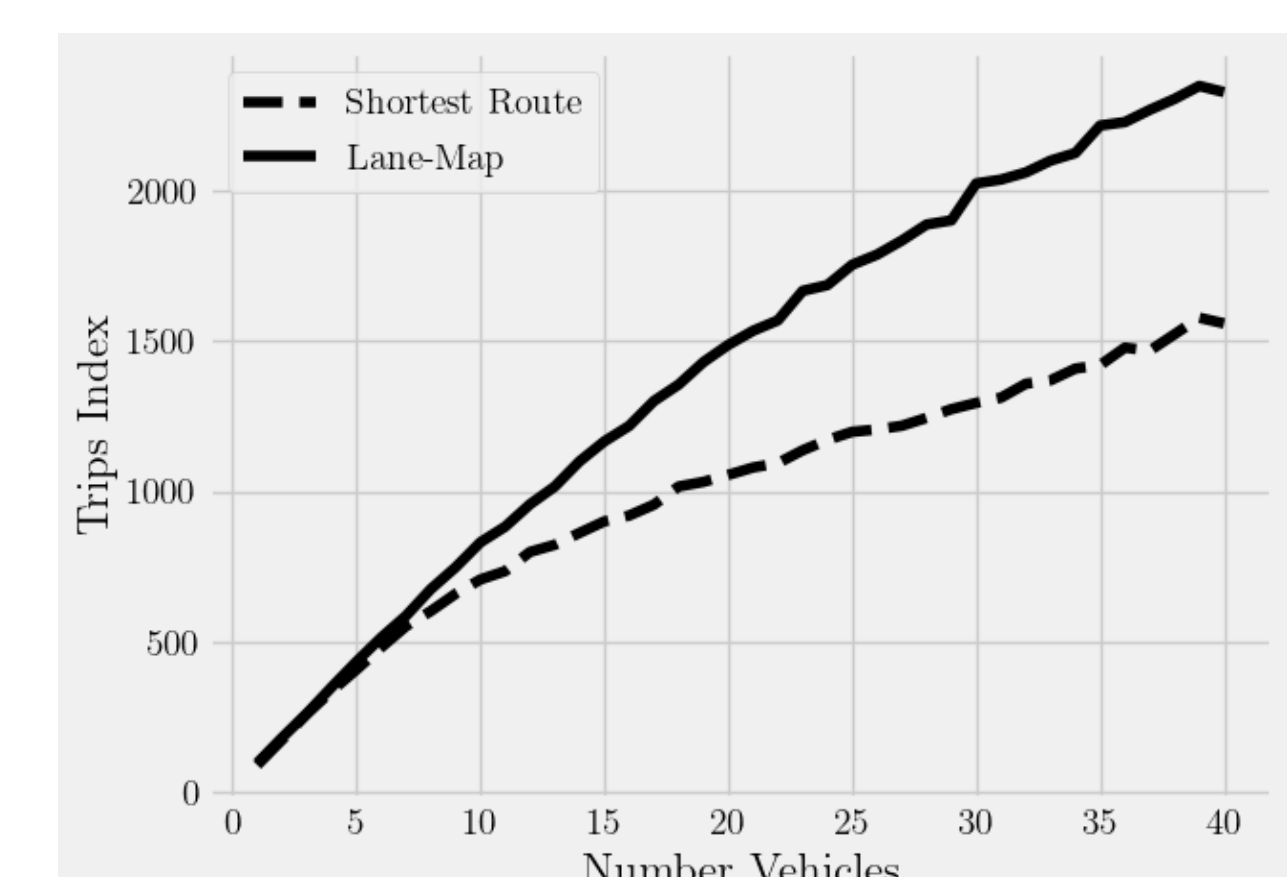
time loss due to
routing conflicts



time loss due to
longer distances



time loss relative to
single-vehicle-case



number of
trips per time unit