Head:	Dr. Anastasios Kouvelas / Dr. Michail Makridis
Topic:	**Network-wide traffic management strategies for the city of Zurich**
Assistant:	Ying-Chuan Ni
Registration:	www.ivt.ethz.ch/en/studies/downloads/assignments.html#registration

Compared to cell- or link-level traffic modeling methods and microscopic traffic simulation, network-level traffic modeling with network fundamental diagrams (NFDs) has become a popular approach due to its supreme computation efficiency. In addition, it has been pointed out that local-level traffic signal control has minimal effect on traffic performance particularly when the network is already congested.

With the development of NFD-based modeling, network-wide traffic management strategies, such as perimeter control, cordon pricing, and route guidance, can be considered to mitigate urban traffic congestion. In this project, you select one or two control strategies and implement them for the city center of Zurich. Comparison between different scenarios regarding parameter settings or control purposes can be conducted.

The tasks may include (depending on the final format, to be discussed):

- Estimating NFDs for each subnetwork
- Building the network-level traffic model for the base case
- Implementing the control strategies
- Analyzing the network traffic performance by looking at different indicators

Links:	
Additional remarks:	Please contact the assistant at least two months before the start date if interested.
Minimum credits:	20/24 ECTS
Recommended lectures:	Road Transport Systems (Verkehr 3), Transport Systems, Traffic Engineering
Additional information:	Python programming skill is required.