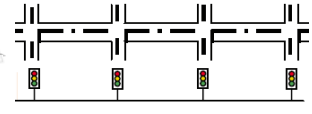


Background

Fixed sensors like Automatic Vehicle Identification (AVI), loop detectors and so on provide information at specific location on the network whereas mobile sensors like probe vehicles provide information about the entire journey of the vehicle. Depending on availability of data from different sources provide avenue for application of data fusion techniques for reliable and robust travel time estimation.



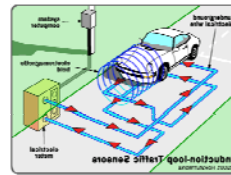
Urban Road network



Signalized Road Network

Purpose

In this study route travel time will be estimated by applying data fusion technique on data obtained from AVI, probe cars, vehicle information and communication system (VICS) and loop detector considering signal control parameter.



Inductive loop detector



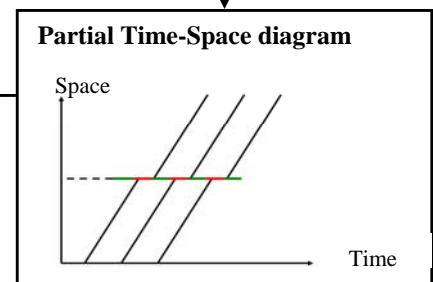
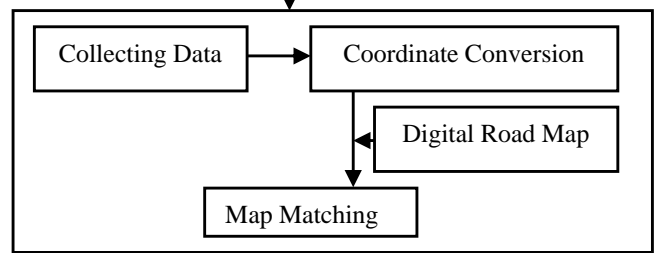
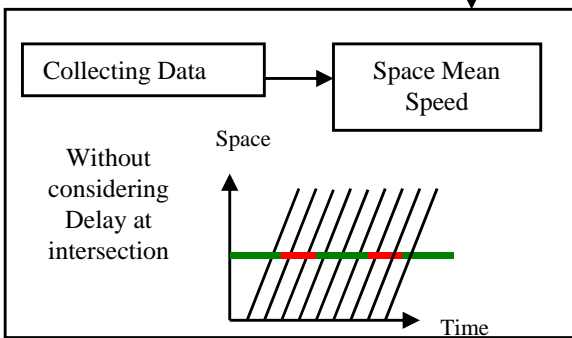
infrared detector

Method

Collection Systems

Fixed Sensors
Loop detector, AVI, VICS

Mobile Sensor
Probe car

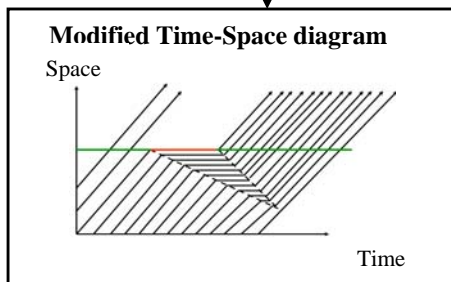


Data Fusion

- Shock wave analysis
- Signal control parameter
- Fundamental diagram



Probe car traffic information



Final Travel Time Estimation

Conclusion

- Estimation of travel time from individual sensors includes some errors.
- Data fusion will be helpful for reliable and robust travel time estimation from sparse data from different sensors.

Contact

neatly60@iis.u-tokyo.ac.jp