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Fitness of v-k relationships

Emperical data

## Analysis of fundamental relations and estimation methods of traffic state variables using complete trajectory data: ZTD

- Since 1935, significant contributions have been made to estimating the traffic state variables (flow q, density k, speed v) and relations between them such as Fundamental Diagram using both, traditionally stationary data and recently available data from probe vehicles. But they have not been validated to a large extend using 100% real traffic data at high spatiotemporal resolution.
- The Zen Trafic Data (ZTD) is 100% complete trajectory data, covering wide spatiotemporal domain with high temporal sampling date (0.1s). It provides meaning to validation and performance evaluation of physical models, fundamental relations and TSE methods.
- The research theme is to statistically evaluate them using ZTD and formulate TSE method to accurately estimate traffic states in complete time-space domain at finer spatiotemporal resolution & probe data with fewer penetration environment using techniques like data assimilation (DA).



