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# Modeling one-way electric carsharing in the city of shanghai, China

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## Abstract

As carsharing is developing rapidly worldwide, carsharing demand estimation becomes a more and more important issue, especially for an area that just introduces this service. Station-based one-way carsharing, as a new carsharing type, recently developed rapidly in China. Both policy-maker and operator want to know how the demand changes with increasing supply. To enrich understanding of these problems, this paper aims to make use of the multi-agent simulation tool (MATSim) to model and simulate one-way carsharing. The largest carsharing project in Shanghai, Evcad, is explicitly analyzed. Specifically, it intends to integrate the mobile phone GSM (Global System for Mobile Communications) data, point of interest data, network data and travel survey data to build a base simulation scenario with about 160,000 agents in the Jiading district, Shanghai. More data, for example the empirical data of operator, are used to calibrate the model. Some special functions, for example, the carsharing vehicles in simulation are pure battery electric vehicles, have been integrated into MATSim. Some preliminary results are presented and validated.

## Keywords

one-way carsharing, agent-based model, electric vehicles, simulation, MATSim