ABSTARCT

***In order to be environment-friendly, relieve traffic congestion, reduce pollution, and be green and sustainable, the optimization and development of public transportation, as the subject of people's long-term research, has always been shining. With the emergence of shared transportation, public transportation systems face more challenges. In order to better connect with bike-sharing, car-sharing, and other modes of transportation, public transportation will carry out important reforms, among which the optimization of line network is one of the most important tasks. The traditional bus route design is mainly based on the “four-stage” method model, which is mainly based on the investigation and analysis of the existing traffic system and land use. Through the work flow of “evaluation, calibration, and verification,” the network balance optimization model is used to get the bus travel allocation prediction model. In this paper, the optimization problem of public transit network is studied from the point of view of the reliability of public transit network. It is proposed that public transit network can be abstracted into series-parallel system and parallel-series system model from the three states of normal, short-circuit failure, and open-circuit failure and is analyzed and discussed through the hypothesis experiment. The research of this paper will provide a new perspective for the optimization of public transit network, complement the traditional methods, and support the optimization and reliability improvement of urban public transit network. More reliable bus networks and other modes of transportation, such as walking, bike-sharing, and rail, will become more suitable for people to get around.***

FLOWCHART

