Real-time information (RTI) and Transit real-time information apps (RTI apps) have claimed to have significant impact on passengers’ waiting time and user experience. Although previous research thoroughly surveyed and simulated the overall impact on certain stops, few studies investigate the impact’s mechanism and its spatiotemporal pattern based on actual real-time data.

In this paper, we first

introduce five categories of trip planning strategies (TPSs) for both RTI-based and non-RTI transit users.

In this paper, we first introduce several for both RTI and non-RTI users’ incidence behavior and corresponding quantitative descriptions. We also theorize and later validate the concept of reclaimed delay and discontinuity delay during the synchronization process. Then, with the support of GTFS real-time data, we optimize the RTI-based *prudent tactic* TPS and calculate the waiting time for each TPSs. Moreover, we compare different TPSs to measure RTI’s waiting time reduction. The results prove that RTI apps using the optimized *prudent tactic* can decrease waiting time for some users, however, it shows great variation geographically and temporally and cannot achieve global optimality for all stops. It also shows that RTI apps using the *greedy tactic* TPS will make users wait significantly longer than the bus delay, even longer than those who leave home randomly.