ABSTRACT

In an increasing number of cities in Europe, as well as elsewhere, on-line information on future arrivals of buses are posted at stops of the transit network. With this additional information, a transit passenger is faced with the problem of determining a matching optimal strategy when several attractive routes to destination exist. For any given day, the optimal choice at a stop is deterministic, however when bus arrivals variability between days is high enough, the optimal strategy as a function of waiting times is completely stochastic. We propose in this paper a generic framework for determining the probability of taking each route of a given choice set at the stop and the mean combined wait time. Several headway distributions proposed in the literature are analyzed and numerical examples presented. The proposed framework may be integrated into various existing assignment models based on the hyperpaths.