

ABSTRACT

A powering pattern representing velocity of a vehicle at each position of a powering interval in a braking delay period between a timing at which the vehicle exceeds allowable velocity and a braking timing at which the vehicle starts to brake, and a coasting pattern representing velocity of the vehicle at each position of a coasting interval subsequent to the powering interval in the braking delay period are calculated after calculating a braking pattern representing velocity of the vehicle in a braking interval, which is a running interval subsequent to the coasting interval and which occurs between a position of the vehicle at the braking timing and a target position for controlling the vehicle to run at predetermined velocity or less, wherein an acceleration characteristic depending on velocity of the vehicle is used to calculate at least the powering pattern.