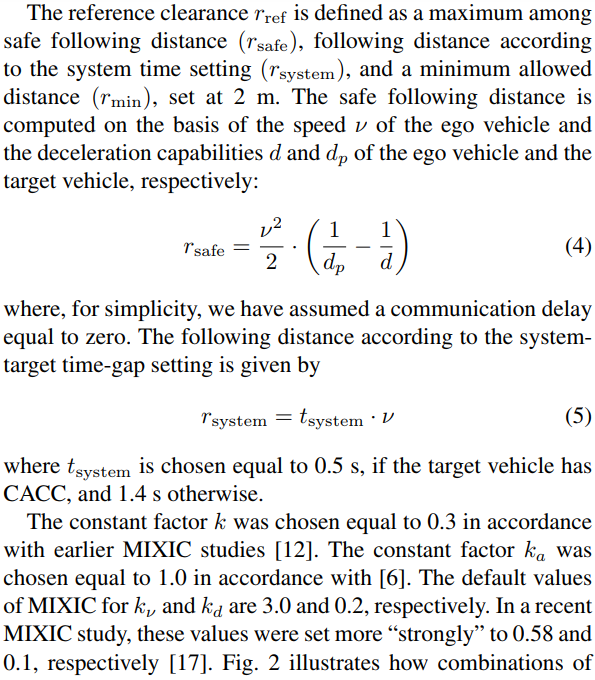
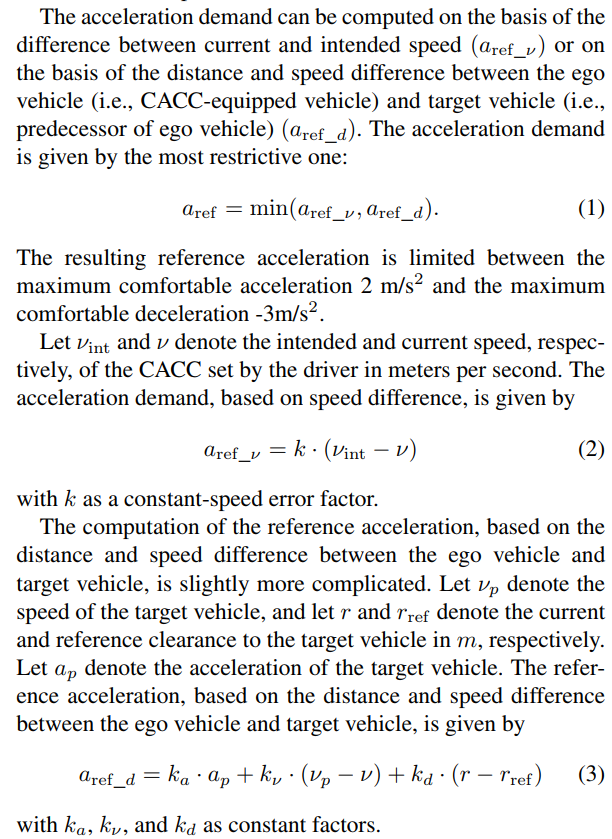
1. For the controlled vehicle:

* When reasonable acceleration (without violating constraints) is not generated yet by the RL controller, we calculate it according to the CACC model: [The Impact of Cooperative Adaptive Cruise Control on Traffic-Flow Characteristics]



* Otherwise, the acceleration (without violating constraints) is generated by the RL controller.

2. For the following vehicles:

We use Bando OV model: (highway)

3. After that, we use the following vehicle dynamic equations to obtain other state variables:

Where delta is the time interval for discretization.