

Abstract

This final project discusses traffic flow which is modeled by the kinematic Lightill, Whitman, dan Richard (LWR) equation. The numerical finite volume scheme is applied to solve the equation. The scheme is used to simulate two important conditions, namely: increasing length of the vehicle queue (shock wave), and the decay of vehicle density after the green light turn (rarefaction wave). Furthermore, the scheme is also used to simulate the increase in traffic density due to narrowing roads, or road blockade.

Keywords: Kinematic LWR equations, shock wave, rarefaction wave, finite volume method