Abstract

This final project discusses the traffic flow modeled with the transport equation which will then be simulated by the Slope Limiter method. In this study the traffic flow model is divided into two conditions, where conditions with traffic flow that have no obstacles and which have obstacles, the obstacles here are vehicles that stop suddenly which cause the vehicle behind to stop, the parameter used in this case is speed vehicle average and density. The simulation results will be compared with the numerical methods Upwind and Lax-Wendroff to find error values, from the calculation with $\Delta x = 0.005$, the error values in Slope Limter, Upwind, and Lax-Wendroff are 1.2×10^{-2}, 2.5×10^{-2}, 3.4×10^{-2}, according to these results it can be said that the Slope Limiter is a good method compared to Upwind and Lax-Wendroff because it has a smaller error value .

Keywords: Transport Equation, Upwind Scheme, Lax-wendroff Method, Slope Limiter Method