Inviscid Burger Equation Application on one-way traffic Flow Problem

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ABSTRACT

Inviscid Burger Equation is a form of hyperbolic partial differential equation that describes fluid flow without the influence of diffusion. Exact solutions to this equation can be found by various methods. Assuming the movement of a vehicle as a one-way fluid flow, the problem of traffic density of one-way traffic will be modeled in the Inviscid Burger Equation. Exact solution of this equation is expected to provide a characteristic description of the problem of one-way traffic flow. The steps used in this study are 1) equalization of assumptions and variables used, 2) adding peturbation due to changes in speed 3) looking for analytic burger equation solutions using multiple scale methods and characteristic methods, then 4) interpreting analytic solutions in cases traffic. The results showed that the solution of both methods are similar. If the peturbation parameter is moved to zero, then the solution is almost the same as the solution without peturbation.

Kata Kunci: *Inviscid Burger, One Way Traffic, Peturbation, Multiple Scale, characteristic method*