Project Proposal

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TODO: Stability analysis, where are we getting data, what problems do we want to solve? Description of the problem. As much as you can offer in terms of the techniques, thoughts expecting what you see, narrow down the problem, not more than a page, for this project, it is motivated using the techniques we are interested in

We will model vehicular traffic as a continuous distribution of vehicles. We will use the conservation equation

$$\frac{\partial k}{\partial t} - \frac{\partial q}{\partial x} = 0 \tag{1}$$

where k is the concentration of traffic and q is the flow rate of the traffic. To find the relation between k and q, we are thinking of fitting a curve to traffic data. Then, we will use a finite differences method to numerically solve the equation. We will also look at special cases and initial conditions qualitatively to find out where our numerical methods work and where they break down.