1116-S1-2728 **Zhengyi Zhou** and **Angela Gallegos*** (angela.gallegos@lmu.edu). *Road Rage and You! Exploring ODEs and Modeling through Traffic Models.* Preliminary report.

Mathematical Models for traffic flow are often introduced as applications of shock and rarefaction waves arising from partial differential equations (PDEs). However, ordinary differential equations (ODEs) can be used for traffic flow from a macroscopic perspective. Using such models, one can have students experiment with inflow and outflow functions, perform dimensional analyses, qualitatively analyze the model system, and perform numerical simulation with parameters relevant to their own experience. We also suggest that these macroscopic traffic models can be used for students to begin to investigate delay-differential equations (DDEs). Traffic flow models provide straightforward, adaptable examples for numerical experimentation and analysis that can enhance the curriculum within an ODE or modeling course. (Received September 22, 2015)