**Improved Model for Traffic Flow** R.M. VELASCO, Department of
Physics, Universidad Autónoma Metropolitana, W. MARQUES JUNIOR, Departamento de Física, Universidade Federal do Paraná — A second order phenomenological model is assumed in order to describe the behavior of vehicles in an unidirectional highway. The density and the average velocity of vehicles are considered as the macroscopic variables relevant to study the system. The traffic pressure is obtained by means of an iterative procedure and the corresponding constitutive equation contains the equilibrium pressure as well as a viscosity which depends on the density. The stability conditions, the phase velocity and the attenuation coefficient are studied. Also the numerical solution for the macroscopic variables is obtained. A close comparison with other models in the literature is done.

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