

Numerical approximations of a traffic flow model on networks

GABRIELLA BRETTI - *University of Salerno*

A mathematical model for fluid-dynamic flows on networks which is based on conservation laws is considered. Road networks are represented as graphs composed by arcs that meet at some junctions. The crucial point is given by junctions, where interactions occur and the problem is underdetermined. The approximation of scalar conservation laws along arcs is carried out by using conservative methods, such as the classical Godunov scheme and more recent kinetic schemes with the use of suitable boundary conditions at junctions. Riemann problems are solved by means of a simulation algorithm tool. We present the algorithm and its application to some test cases and to some areas of urban network.