

Colloquium

Spreading Phenomena on the Cell-Transmission Model

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摘 要：

The paper mainly examines both analytic solutions of the LWR model and numerical solutions of the cell-transmission model under consideration of a density-flow relationship in the shape of a trapezoid or a triangle. Since the differences between the solutions from two models give errors changing with time, this behavior of errors defines the spreading phenomena which are dealt with in certain cases. Namely, this investigates exactly when the spreading phenomena occur if the initial cell densities have the same common difference. Besides, for an initial density profile, representing traffic running into the back of a stationary queue, the paper shows that the spreading phenomena always exist. Some standard examples are present in this paper revealing that the boundary conditions play a key role in the issue of the spreading phenomena.