IN-CELL DISCONTINUOUS RECONSTRUCTIONS FOR THE COMPUTATION OF NONCLASSICAL/NONCONSERVATIVE SHOCKS. APPLICATION TO THE TRAFFIC FLOW MODELLING

CHRISTOPHE CHALONS

ABSTRACT. It is the purpose of this talk to address the topic of numerical approximation of nonclassical solutions. By nonclassical, it is meant either discontinuous solutions arising in nonconservative hyperbolic systems, or discontinuous solutions arising in conservative hyperbolic systems but which do not satisfy the standard entropy selection principles. We introduce the basics of a new strategy based on in-cell discontinuous reconstructions to deal with this challenging issue, and apply it to several traffic flow problems.

The presentation will be based on joint works with P. Goatin, M.-L. Delle Monache and S. Villa, see [2] and [3].

Keywords: traffic flow modelling, nonclassical solutions, finite volume schemes, in-cell discontinuous reconstructions

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LABORATOIRE DE MATHÉMATIQUES DE VERSAILLES, UNIVERSITÉ DE VERSAILLES SAINT-QUENTIN-EN-YVELINES

E-mail address: `christophe.chalons@uvsq.fr`