HIGH ORDER FINITE-VOLUME WENO SCHEMES FOR NON-LOCAL TRAFFIC FLOW MODELS

FELISIA CHIARELLO, LUIS M. VILLADA, AND PAOLA GOATIN

Abstract. This talk focuses on the numerical approximation of the solutions of non-local systems of conservation laws in one space dimension, arising in traffic modeling, in which the mean velocity is assumed to be a nonincreasing function of the downstream traffic density. We propose to use Finite Volume WENO (FV-WENO) schemes to obtain high-order approximations, with quadratic polynomials reconstructions in each cell to evaluate the non-local terms. Simulations using FV-WENO schemes are presented for both, scalar and multi-class traffic flow models.

Keywords: system of conservation laws, nonlocal flux, traffic flow model, finite volume schemes, weighted essentially non-oscillatory scheme.

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References


INRIA SOPHIA ANTIPOLIS - MÉDITERRANÉE, FRANCE
E-mail address: felisia.chiarello@inria.fr

UNIVERSIDAD DEL BÍO-BÍO, CHILE
E-mail address: lvillada@ubiobio.cl

INRIA SOPHIA ANTIPOLIS - MÉDITERRANÉE, FRANCE
E-mail address: paola.goatin@inria.fr