High-order Finite Difference Methods for Nonlinear Conservation Law

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Abstract

The purpose of this talk is to introduce ENO (Essentially Non-Oscillatory) schemes for numerical solution of nonlinear conservation laws in one dimension. ENO (and its popular variant, WENO) extends the first-order upwind concept to higher order of accuracy, and has been the most widely used method among engineering community for the past decades. An overview of the idea of ENO schemes will be given together with some numerical experiments to illustrate their efficiency.