

1106-VL-1011 **Yuan Liu***, 619 Red Cedar Road, Department of Mathematics, Michigan State University, East Lansing, MI 48824. *high order parametrized maximum-principle-preserving and positivity-preserving weno schemes on unstructured meshes.*

We will talk about the generalization of the maximum-principle-preserving (MPP) flux limiting technique developed in [Z. Xu, Math. Comp., (2013)] to develop a class high order MPP finite volume schemes for scalar conservation laws and positivity-preserving (PP) finite volume WENO schemes for compressible Euler system on two dimensional unstructured meshes. The key idea of this parameterized technique is to limit the high order schemes towards first order ones which enjoy MPP property, by decoupling linear constraints on numerical fluxes. Error analysis on one dimensional non-uniform meshes is presented to show the proposed MPP schemes can maintain high order of accuracy. Similar approach is applied to solve compressible Euler systems to obtain high order positivity-preserving schemes. Numerical examples coupled with third order Runge-Kutta time integrator are reported. (Received September 09, 2014)