WICHITA STATE UNIVERSITY

Department of Mathematics, Statistics & Physics

Visiting Candidate for Assistant Professor Position

Dr. Yuan Liu

Mississippi State University

"High order structure-preserving numerical methods for convection-diffusion-reaction equations"

Abstract:

Convection-diffusion-reaction(CDR) equation is one of the widely used mathematical models in science and engineering. It describes how one or more substances distributed under the influences of convection, diffusion and reaction processes.

In this talk, we will present some recent work on high order numerical methods for solving CDR equation under two cases. (1) When there are only convection terms, the CDR equation is hyperbolic conservation laws. We will talk about the development of high order bound-preserving numerical methods. (2) When there are only diffusion and reaction terms, Krylov implicit integration factor discontinuous Galerkin methods on sparse grids are proposed to solve the equation in high dimensional cases.

Friday, March 8, 2019
3:00 PM in 372 Jabara Hall

Please come join us for refreshments before the lecture at 2:30 p.m. in room 353 Jabara Hall.