A Kernel-Based High Order Numerical Scheme

Yan Jiang (蒋琰) Michigan State University

In this talk, I will introduce a novel numerical scheme, in which the spatial derivatives are represented as a special kernel based formulation of the solutions. We use this method to solve the nonlinear parabolic equations and Hamilton-Jacobi equations. Moreover, theoretical investigations indicated that the proposed scheme is unconditionally stable up to third order accuracy when combining with the SSP-RK scheme.