Title: Multi-wavelet based limiter for discontinuous Galerkin solutions

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 Abstract:
In the recent past, discontinuous Galerkin (DG) methods gained a lot of importance in wide variety of applications due to its properties like inherent conservation, flexibility for adaptivity and easy to parallelize. The solutions of nonlinear hyperbolic partial differential equations, in general, contain shocks or develop discontinuities. DG method can efficiently compute high-order solutions when it is smooth but develop spurious oscillations near a shock. Usually, limiters are applied for the numerical treatment of these artifacts which invariably leads to loss of accuracy. In this talk, I will present wavelet (multi-resolution analysis) based limiters for the DG method and discuss their advantages and disadvantages