Study on the Central Differencing Scheme with the Staggered Version (STG) for Solving the Hyperbolic Partial Differential Equations

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Abstract : In this paper we present the second-order central differencing scheme with the staggered version (STG) for solving the advection equation and Burger's equation. This scheme based on staggered evolution of the re-constructed cell averages. This scheme results in the second-order central differencing scheme, an extension along the lines of the first-order central scheme of Lax-Friedrichs (LxF) scheme. All numerical simulations presented in this paper are obtained by finite difference method (FDM) and STG. Numerical results are shown that the STG gives very good results and higher accuracy.