

The solution of the Burgers' equation computed by the standard finite element method is degraded by oscillations, which are the manifestation of the Gibbs phenomenon. In this work we study the following numerical methods: Discontinuous Galerkin method, stable low order schemes and the flux corrected technique method in order to prevent the undesired Gibbs phenomenon. The focus is on the reduction of severe overshoots and undershoots and the preservation of the smoothness of the solution. We consider a simple 1D problem on the interval $(0, 1)$ with different initial conditions to demonstrate the properties of the presented methods. The numerical results of individual methods are provided.