

In the present work we implemented parallel version of a computational fluid dynamics code. This code is based on Discontinuous Galerkin Method (DGM), which is due to its favourable properties suitable for parallelization. In the work we describe the Navier-Stokes equations and their discretization using DGM. We explain the advantages of usage of the DGM and formulate the serial algorithm. Next we focus on the parallel implementation of the algorithm and several particular issues connected to the parallelization. We present the numerical experiments showing the efficiency of the parallel code in the last chapter.