

In this work, we deal with the finite element method Streamline Upwind/Petrov-Galerkin (SUPG) and use it to solve boundary value problem for the stationary convection-diffusion equation with dominant convection with Dirichlet boundary condition on the whole boundary of bounded polyhedral computational domain of dimension 1 and 2, respectively. We consider a quadratic Lagrangian finite elements on the line segments and triangles, respectively. The core of the work is a proposition of choice of stabilizing parameter of SUPG method as an elementwise affine function in outflow boundary layer and as an elementwise constant function in the rest of the computational domain. We show that this choice gives a more accurate solution than the choice of the stabilization parameter as a constant in each element.