

Abstract: In the submitted work we are concerned with the numerical simulation of fluid flow and elastic body interaction. This is a coupled problem of the equations of two kinds, equations describing the flow and equations describing dynamical behaviour of the elastic body, which is partly surrounded by the fluid. These systems are coupled by suitable transmission conditions. The fluid flow is described by the Navier-Stokes equations, which are reformulated by the ALE method because of the deformation of the computational domain caused by the body movement. The deformation of the elastic body is described by the linear elasticity system with the generalized Hooke's law. We solve the problem by the finite element method. The developed methods are tested on the physical model of human vocal folds.