

عنوان مقاله:

Optimization with the time-dependent Navier-Stokes equations as constraints

محل انتشار:

مجله روشهای محاسباتی برای معادلات دیفرانسیل، دوره 3، شماره 2 (سال: 1394)

تعداد صفحات اصل مقاله: 12

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خلاصه مقاله:

In this paper, optimal distributed control of the time-dependent Navier-Stokes equations is considered. The control problem involves the minimization of a measure of the distance between the velocity field and a given target velocity field. A mixed numerical method involving a quasi-Newton algorithm, a novel calculation of the gradients and an inhomogeneous Navier-Stokes solver, to find the optimal control of the Navier-Stokes equations is proposed. Numerical examples are given to demonstrate the efficiency of the method

کلمات کلیدی:

Optimal Control Problems, Navier-Stokes equations, PDE-constrained optimization, quasi-Newton algorithm, Finite difference

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