

Partial Differential Equations Seminar

Title Numerical simulation of Stokes flow with time-dependent inflow condition

Speaker 김준석 교수

Affiliation 고려대 수학과

Date Aug. 31st, 14:00 ~ 15:00

Location Zoom 강연

Abstract

In this presentation, we briefly review and describe a projection algorithm for numerically computing the two-dimensional time-dependent incompressible Stokes equation. The projection method, which was originally introduced by Alexandre Chorin [A.J. Chorin, Numerical solution of the Navier–Stokes equations, Math. Comput., 22 (1968), pp. 745–762], is an effective numerical method for solving time-dependent incompressible fluid flow problems. The key advantage of the projection method is that we do not compute the momentum and the continuity equations at the same time, which is computationally difficult and costly. In the projection method, we compute an intermediate velocity vector field that is then projected onto divergence-free fields to recover the divergence-free velocity. Numerical solutions for time-dependent inflow Stokes flows.

참고: 세미나 강연 중에 간단한 MATLAB 코드를 제공할 예정입니다.
MATLAB 프로그램을 준비하시면 같이 실습을 할 수가 있습니다.



연세대학교 수학기산학부

주최: 4단계 BK21 수리과학 및 계산 교육연구단