Simader, Christian G.; **Sohr, Hermann**

A new approach to the Helmholtz decomposition and the Neumann problem in L^q-spaces for bounded and exterior domains. (English) Zbl 0791.35096

Galdi, Giovanni Paolo (ed.), Mathematical problems relating to the Navier-Stokes equation. River Edge, NJ: World Scientific Publishing Co. Ser. Adv. Math. Appl. Sci. 11, 1-35 (1992).

The authors present a new approach to Helmholtz decomposition and the Neumann problem in L^q spaces for bounded and exterior domains. A number of theorems are presented for its existence, uniqueness and stability.

The paper is purely theoretical in nature and very useful for theoretical researches.

For the entire collection see [Zbl 0780.00006].

Reviewer: P.K.Mahanti (Ranchi)

MSC:

35Q30	Navier-Stokes equations
35J05	Laplace operator, Helmholtz equation (reduced wave equation), Poisson equation
46N20	Applications of functional analysis to differential and integral equations
35A05	General existence and uniqueness theorems (PDE) (MSC2000)
35B35	Stability in context of PDEs

Keywords:

bounded domains; exterior domains; existence; uniqueness; stability