

THE FORCED KDV EQUATION WITH ABSORBING BOUNDARY CONDITIONS

SUNGIM WHANG AND SUNMI LEE

ABSTRACT. We study the Korteweg-de Vries (KdV) equation with a forcing for a flow of an inviscid and incompressible fluid. The fluid is of a constant density. The forced KdV equation is defined in an infinite domain and it is reduced to a bounded domain by introducing absorbing boundary conditions. A new numerical method is proposed to solve this boundary value problem. New multiple numerical solitary wave solutions of the stationary KdV equation are discussed for various forcings. Numerical examples are provided to confirm and illustrate the accuracy and effectiveness of the method. Time evolutions of the multiple numerical solitary wave solutions are presented.

SUNGIM WHANG, DIVISION OF INDUSTRIAL MATHEMATICS, NATIONAL INSTITUTE FOR
MATHEMATICAL SCIENCES, DAEJEON, REPUBLIC OF KOREA

E-mail address: `siwhang@nims.re.kr`

SUNMI LEE, KONKUK UNIVERSITY, DEPARTMENT OF MATHEMATICS, 1 HWAYANG-
DONG, GWANGJIN-GU, SEOUL, 143-701, REPUBLIC OF KOREA.

E-mail address: `sunlee@konkuk.ac.kr`

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