1041-76-180 **Jeongwhan Choi*** (jchoi@korea.ac.kr), Dept. of Math., Korea University, Sungbukgu Anamdong 5-1, Seoul, 136-701, South Korea, and **Shu-Ming Sun** and **Sung-Im Whang**.

Surface wave generated by a positive forcing due to an obsruction.

Forced surface waves on an incompressible, inviscid fluid in a two-dimensional channel with a small bump on a horizontal rigid flat bottom are studied. The wave motion on the free surface is determined by a nondimensional wave speed F, called Froude number, and F = 1 is a critical value of F. If F is slightly greater than 1, then a time-dependent forced Korteweg–de Vries (FKdV) equation can be derived to model the wave motion on the free surface. The steady FKdV equation is first studied both theoretically and numerically. It is shown that there exists a cut-off value of the Froude number for the existence of steady solutions. For the unsteady FKdV equation, it is found that the solution of FKdV with zero initial condition tends to a stable steady solution for certain values of Froude number and that a succession of solitary waves are periodically generated and continuously propagating upstream as time evolves for some other values of Froude number. Moreover, the solutions of FKdV equation with nonzero initial conditions are studied. (Received August 11, 2008)