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**Shu-Ming Sun\*** ([sun@math.vt.edu](mailto:sun@math.vt.edu)), Department of Mathematics, Virginia Tech, Blacksburg, VA 24061. *Initial Boundary Value Problems of the Korteweg-de Vries Equation.*

The talk will focus on the initial- and boundary-value problems (IBVP) of the Korteweg-de Vries (KdV) equation posed in a quarter plane and on a bounded interval with nonhomogeneous boundary conditions. The problems arise naturally in certain circumstances when the KdV equation is used as a model for waves and a numerical scheme is needed. It will be shown that the IBVP is locally and globally well-posed in certain Banach spaces. Then, these well-posedness results will be applied to obtain the exact theory of convergence of the two-point boundary value problem to the quarter-plane boundary value problem, which provides a justification for the use of the two-point boundary value problem in numerical studies of the quarter plane problem. (This is a joint work with J. Bona and B. Zhang) (Received August 20, 2007)