HATEF DASTOUR, The University of Calgary
A computational method for solving an inverse heat conduction problem

In this study, a one-dimensional inverse heat conduction problem with unknown nonlinear boundary conditions is investigated. Nonlinear boundary conditions are imposed involving both the flux and the temperature. The heat transfer coefficient depends on the boundary temperature and the dependence has a complicated or unknown structure. A numerical algorithm is generated, based on a space marching scheme and the mollification method, and its stability and convergence are analyzed. Two numerical examples are tested to illustrate the efficiency of the proposed algorithm.