

Inverse Stefan Problems

by N. L Goldman

One-phase inverse Stefan problem solved by Adomian. 1 Feb 2010 . The Stefan problem is a particular free boundary problem for the heat equation which arises in the investigation of the melting of solids. In the Inverse Stefan Problems Nataliya Goldman Springer INVERSE STEFAN PROBLEM: TRACKING OF THE INTERFACE POSITION FROM MEASUREMENTS. ON THE SOLID PHASE c. BENARD AND A. AFSHARI. Effect of sensor locations on the solution of inverse Stefan problems . 4 May 2015 . The two-phase Stefan problem is widely used in industrial field. This paper focuses on solving the two-phase inverse Stefan problem when the The solution of the inverse Stefan problem - ScienceDirect The method has been used in the development of a source?and?sink method to find the boundary conditions in inverse Stefan problems. Greens functions have SOLUTION OF INVERSE STEFAN PROBLEMS BY A SOURCE . A method is given for solving the inverse Stefan problem for the heat . various researchers to consider the (single phase) inverse Stefan problem, i.e. given the. Direct and inverse one-phase Stefan problem solved by the . 10 Aug 2014 . The problem to determine from the motion of the boundary between two phases of some material the change in the boundary conditions or in An Inverse Stefan Problem Relevant to Boilover: Heat Balance . Regularization of an inverse Stefan problem. D. D. Ang, A. Pham Ngoc Dinh, and Primary: 35R35: Free boundary problems. Secondary: 35K05: Heat equation and two-dimensional inverse stefan problems - CiteSeerX

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Application of the Variational Iteration Method for Inverse Stefan Problem with Neumanns Boundary Condition Damian Slota Institute of Mathematics Silesian . An inverse Stefan problem: identification of boundary value . A new control volume based enthalpy method is described here that is designed to solve inverse phase change problems. The new method uses a direct Inverse Stefan problems - Ghent University Library 8. The Hyperbolic Stefan Problem 9. Inverse Stefan Problems 10. Analysis of the Classical Solutions of Stefan Problems 11. Regularity of the Weak Solutions of Stefan problem, inverse - Encyclopedia of Mathematics Permalink: <https://lib.ugent.be/catalog/rug01:000461118>; Title: Inverse Stefan problems / N.L. Goldman. ISBN: 0792345886; Author: Goldman, N. L.; Publisher: experimental verification of approximate solution of the inverse . M. M. Sarsengeldin, S. Guvercin, and S. Kassabek, "Solution of inverse Stefan problem by Hartree functions method," in Journal of Physics, Conference series, An analytical method for solving the two-phase inverse Stefan problem In this paper, solutions of one-phase direct and inverse Stefan problems are presented. The direct problem consists in a calculation of temperature distribution The Numerical Solution of the Inverse Stefan Problem in Two Space . In this monograph the theory and methods of solving inverse Stefan problems for quasilinear parabolic equations in regions with free boundaries are developed. Solution of inverse Stefan problem using a new enthalpy method . 12 Dec 2010 . Two moving boundary sub-problems are defined: burning liquid surface In verse Stefan problem corresponding to the first case solved by the ?Combined solution of the inverse Stefan problem for successive . 23 Sep 2015 . Abstract. In the paper we present an application of the homotopy analysis method for solving the two-phase inverse Stefan problem. In the Optimal Control and Inverse Problems for PDEs III. Inverse Stefan In the context of solidification systems, an inverse Stefan problem involves the determination of boundary conditions such that the phase front moves in a . The Solution of Two-Phase Inverse Stefan Problem Based on a . On the other hand, inverse Stefan problems for quasilinear parabolic equations are still insufficiently studied, although the development of their theory and . Inverse Stefan Problems - Google Books Result A new analytic solution of the inverse-Stefan problem in biological tissues is presented. The solution, which is based on the enthalpy method, assumes that ENTHALPY METHOD FOR INVERSE STEFAN PROBLEMS . We propose to determine a function $v(t)$ such that $u(O,t) = v(t)$, $u(x,t)$ being the temperature in the liquid phase in a medium of water and melting ice. This ill-posed The numerical solution of the inverse Stefan problem The inverse Stefan problem can be understood as a problem of nonlinear approximation theory which we solved numerically by a generalized Gauss-Newton . A one-phase inverse Stefan problem - IOPscience In mathematics and its applications, particularly to phase transitions in matter, a Stefan problem . The Stefan problem also has a rich inverse theory: in such problems, the meting depth (or curve or hypersurface) s is the known datum and the Analytical solution of two-phase spherical Stefan problem by heat . 2 Feb 2015 . The paper proposes a procedure for solving the inverse Stefan problem consisted in reconstruction of the function describing the heat transfer The Numerical Solution of the Inverse Stefan Problem in Two . - Jstor 31 May 2018 . In this paper, the solution of one-phase inverse Stefan problem is presented. The problem consists of the reconstruction of the function which Exact Solution to the One-Dimensional Inverse-Stefan Problem in . A new combined solution of the one-dimensional inverse Stefan problem in biological tissues is presented. The tissue is assumed to be a nonideal material in Inverse stefan problem - Wiley Online Library B.M. Budak, F.P. Vasilev Approximate Methods of Solving Optimal Control Problems [Priblizhennye metody resheniya zadach optimalnogo upravleniya]. The inverse Stefan problem for the heat equation in two space . 21 May 2014 - 49 min - Uploaded by FIT Mathematical Science Professor Ugur Abdulla, Florida Institute of Technology See the video at the FIT site: . Stefan problem - Wikipedia ABSTRACT. In the paper, the one- and two-dimensional two-phase inverse Stefan problems are formulated and described by means of the optimization method. Inverse

stefan problem: Tracking of the interface position from . The aim of this study is to investigate the effect of sensor location on the solution of inverse Stefan problems. A unidirectional conduction driven solidification The Classical Stefan Problem - 2nd Edition - Elsevier The moving solid/liquid interface of a melting solid in the one-dimensional case is identified from temperature and flux measurements performed solely on the . Regularization of an inverse Stefan problem - Project Euclid the given domain to the sub-domains occupied by the liquid and solid phases. In the inverse Stefan problem it is usually assumed that the additional information,. 1. Introduction The inverse problem provides a very useful tool for A method is given for solving the inverse Stefan problem for the heat equation in two space variables. The approach is based on using a complete family of Computational Science – ICCS 2008: 8th International Conference, . - Google Books Result ?15 Sep 1992 . Inverse stefan problem: Tracking of the interface position from measurements 2 G. Stolz, Numerical solutions to an inverse problem of heat