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Yu. M. Matsevity

**INVERSE HEAT CONDUCTION
PROBLEMS**

Volume

II

APPLICATIONS

National Academy of Sciences of Ukraine

A. N. Podgorny Institute for Mechanical Engineering
Problems

**INVERSE HEAT
CONDUCTION
PROBLEMS**

Yu. M. Matsevity

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PROBLEMS**

In two volumes

Volume

2

APPLICATIONS

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The monograph deals with statements and methods for solving inverse heat conduction problems (IHCP). It also discusses issues in the well-posed statement of these problems and methods for regularizing the solution of ill-posed problems. Emphasis is placed on parametric identification of thermal processes based on automated fitting methods; spectral influence functions, and lumped capacity and optimal dynamic filtering techniques. The monograph demonstrates the ways of implementing these methods using digital, analog and hybrid computers for identification of boundary and initial conditions (boundary and retrospective IHCP); and thermophysical and geometric characteristics (inner and geometric IHCP) to solve combined IHCP and optimization problems. The monograph presents the results of solving IHCP for power industry and mechanical engineering applications, as well as for metallurgical and metalworking processes.

The monograph is intended for scientists and technologists working in the field of thermal physics and heat engineering. The book can have a practical value for post-graduates, and instructors and students of technical higher educational institutions.

125 Figures and 12 Tables. References: 830 titles.

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CONTENTS

VOLUME 1 METHODOLOGY

Preface to the English edition	5
References	21
Preface	34
Key symbols and acronyms	37
CHAPTER I THEORY. GENERAL ASPECTS.....	49
I.1. Terminology.....	49
I.2. Mathematical Model of the Heat Conduction Phenomenon.....	56
I.3. Transformation of Mathematical Models.....	62
I.4. Discretization of Mathematical Models.....	67
I.5. Classification of Inverse Heat Conduction Problems.....	76
CHAPTER II WELL-POSEDNESS OF STATEMENTS OF INVERSE HEAT CONDUCTION PROBLEM.....	80
II.1. Conditions of Well-Posedness.....	80
II.2. Kinds of Statements.....	85
II.3. On Existence and Uniqueness of Solutions.....	89
II.4. Solution Stability.....	93
CHAPTER III METHODS AND MEANS OF SOLVING INVERSE HEAT CONDUCTION PROBLEMS.....	97
III.1. Stages and Methods of Solving.....	97
III.2. Computing Machinery.....	104
III.3. Digital Computers.....	105
III.4. Analog Devices.....	107
III.5. Hybrid Systems.....	111

CHAPTER IV DETERMINISTIC METHODS.....	123
IV.1. Conditionally-Regular Methods.....	123
IV.2. Regularization by Desensitization.....	130
IV.3. Imposing Constraints on the Algorithm.....	132
IV.4. Tikhonov Regularization.....	142
IV.5. Regularizing Algorithms and Their Features.....	150
 CHAPTER V AUTOMATED FITTING METHOD.....	 162
V.1. General Characteristic of the Method.....	162
V.2. Parameterization of Sought For Functions.....	163
V.3. Methodology Aspects.....	167
V.4. The Objective Functional and Its Minimization.....	169
V.5. Accuracy Aspects.....	171
V.6. Analog Implementation	177
V.7. Hybrid Implementation.....	183
 CHAPTER VI METHOD OF SPECTRAL INFLUENCE FUNCTIONS.....	 190
VI. 1. Methodology Issues.....	190
VI.2. Spectral Influence Functions.....	192
VI.3. Transient Problem	198
VI.4. Nonlinear Case.....	201
VI.5. Regional Spectral Influence Functions.....	203
VI.6. Spectral Influence Functions in Heat Object Control Problems.....	210
VI.7. Regional-Analytical Identification of Heat Flows.....	213
 CHAPTER VII LUMPED-CAPACITY METHOD.....	 221
VII.1. The Notion of Lumped Capacity.....	221
VII.2. Methodology aspects.....	226
VII.3. Lumped capacity in identification problems.....	231
VII.4. Transition from initial models to lumped-capacity ones.....	235
VII.5. Heat transfer identification in systems with surface sources.....	240

VII.6. Prospects of using the method for solving inverse heat conduction problems.....	243
CHAPTER VIII STOCHASTIC METHODS	254
VIII. 1. General.....	254
VIII.2. Statistical regularization	264
VIII.3. Conditionally-regular methods.....	272
VIII.4. Principles of dynamic filtering (the Kalman filter).....	275
CHAPTER IX OPTIMAL DYNAMIC FILTERING METHOD.....	281
IX.1. Methodology aspects.....	281
IX.2. Filter Quality Improvement Methods.....	288
IX.3. Iterative filter.....	294
IX.4. Iterative Filter Properties.....	299
IX.5. Truncated filter.....	308
IX.6. The truncated filter in hybrid systems.....	312
IX.7. Modification of the filter for solving inner inverse heat conduction problems.....	317
IX.8. Adaptive filter.....	324
IX.9. Adaptive filter properties.....	330
IX.11. Performance of filtering algorithms for solving inner and combined inverse heat conduction problems.....	341
IX.12. Optimal dynamic filtering and control problems.....	367
REFERENCES.....	383

VOLUME 2 APPLICATIONS

Preface.....	5
Key symbols and acronyms.....	7
Acronyms.....	9
CHAPTER X SOLVING BOUNDARY IHCP.....	12
X.1. Features of BC Identification by the Automated Fitting Method.....	12
X.2. Identification of Time-Variable Boundary Conditions.....	18
X.3. Identification of Local Heat Transfer Coefficients.....	20
X.4. Simultaneous Identification of the Heat transfer Coefficient and the Medium Temperature.....	30
X.5. Identification of Contact Heat Transfer Boundary Conditions.....	32
X.6. Local TCR Definition.....	44
CHAPTER XI IDENTIFICATION OF HEAT TRANSFER BOUNDARY CONDITIONS	50
XI. 1. Heat Transfer on Surfaces of Turbomachine Casing Elements.....	50
XI.2. Heat Transfer in an Internal Combustion Engine Piston.....	54
XI.3. Heat Transfer in Cooled Elements of Metallurgical Equipment with Metal Melts.....	65
XI.4. Heat Emission on Surfaces of Cooling Elements in Iron-and-Steel Furnaces.....	69
XI.5. Heat Transfer in Heat Recovery Units.....	77
XI.6. Heat Emission during Surface Boiling of a Spray.....	81
XI.7. Heat Transfer in Electronics Components with MicroChannel Cooling.....	84
CHAPTER XII INNER IHCP SOLUTION.....	90
XII. 1. Non-extremal methods.....	90
XII.2. Inversion of a Direct Problem Solution.....	91
XII.3. Inversion of the mathematical model.....	96
XII. 4. Extremal Methods.....	104

XII.5. Regularization of solutions.....	110
XII.6. Identification of Thermal Conductivity With the Automated Fitting Method.....	113
XII.7. Identification of Thermal Conductivity in Thin Coatings.....	118
XII.8. Identification of specific heat capacity.....	120
XII.9. Reducing the inner IHCP to the boundary one.....	122
XII.10. Features of determining TPC with the method of substitutions.....	126
XII.11. Identification of thermal diffusivity.....	135
XII.12. Identification of the emissivity factor.....	139
XII.13. Hybrid identification of heat conduction.....	141

CHAPTER XIII IDENTIFICATION OF TPC OF SOLIDS AND INNER HEAT SOURCES..... 145

XIII.1. Thermal properties of new nonconventional materials.....	145
XIII.2. Thermal conductivity in ceramic materials.....	149
XIII.3. Identification of heat sources during induction heating of metals.....	157
XIII.4. Determining the power of heat sources for induction hard facing.....	167
XIII.5. Identification of parameters of inner heat emission during activation annealing of semiconductor wafers.....	179
XIII.6. Equivalent thermal conductivity in relief-profile printed-circuit boards in electronics.....	186
XIII.7. Identification of power of heat sources in a cermet heating element.....	195

CHAPTER XIV SOLUTION OF GEOMETRIC INVERSE HEAT CONDUCTION PROBLEMS..... 202

XIV.1. Statement of geometric inverse problems.....	202
XIV.2. Nonextremal methods.....	204
XIV.3. Extremal methods.....	207
XIV.4. Assignment of heat sources to fixed locations.....	209
XIV.5. Automated fitting method.....	223
XIV.6. Identification of zones for feasible layout of heat sources with forbidden zones.....	225

XIV.7. Layout of heat sources with different intensities.....	227
XIV.8. Successive layout of heat sources.....	229
XIV.9. Layout of heat objects when the number of locations exceeds the number of objects.....	232
XIV.10. Minimization of geometric properties of electronics devices during their thermal design.....	234

CHAPTER XV IDENTIFICATION OF GEOMETRIC PARAMETERS
OF HEAT SYSTEMS..... 238

XV.1. Determining the thickness of a heat-conducting wall.....	238
XV.2. Determining the thickness of layers in a multilayer wall.....	242
XV.3. Identification of coating thickness.....	248
XV.4. Determining the hardenability depth of sheet products.....	251
XV.5. Evaluation of the Geometric Parameters of Cooling Elements in Pyroindustrial Units.....	257
XV.6. Identifying Flash Smelter Bottom Failure Depth.....	261
XV.7. Packaging resistive elements in cermet heaters.....	265

CHAPTER XVI SOLUTION OF RETROSPECTIVE INVERSE
HEAT CONDUCTION PROBLEMS..... 276

XVI.1. Time inversion in heat conduction problems.....	276
XVI.2. Solution of an ill-posed problem.....	277
XVI.3. Determination of initial temperature with the automated fitting method.....	281
XVI.4. Identification of initial conditions by the optimal dynamic filtering method.....	283
XVI.5. Problem solution by the discrete congruence method.....	287

CHAPTER XVII SOLUTION OF THE COMBINED INVERSE HEAT
CONDUCTION PROBLEM..... 293

XVII.1. Combined inverse problems.....	293
XVII.2. Simultaneous determination of TPC and BC parameters by the optimal dynamic filtering method.....	296
XVII.3. Simultaneous determination of thermal conductivity and heat transfer coefficients with the automated fitting method.....	307

XVII.4. Heat conduction identification with simultaneous determining of heat transfer conditions for a spray-cooled rod.....	310
XVII.5. Identification of heat transfer parameters during induction hard-facing.....	312
CHAPTER XVIII SOLUTION OF OPTIMIZATION PROBLEMS.....	318
XVIII.1. From inverse problems to optimization problems.....	318
XVIII.2. Optimization of thermal processes during induction hard facing.....	323
XVIII.3. Optimization of activation annealing of semiconductor wafers.....	329
XVIII.4. Optimization of the slag granulation heating process.....	333
REFERENCES.....	345
INDEX.....	405

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Yuri Mikhailovich

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