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Titolo	Inverse problems of electromagnetic geophysical fields / / P.S. Martyshko
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ISBN	3-11-094328-X
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Nota di contenuto	Frontmatter -- Contents -- Introduction -- Chapter 1. Two-dimensional problems of a magnetic exploration method involving artificial field magnetization and electric exploration by a direct current -- Chapter 2. The effective algorithms of solution of direct and inverse three-dimensional problems of magnetic exploration taking account of demagnetization -- Chapter 3. Mathematical theory and algorithms of the solution of three-dimensional inverse problems of electric exploration with a direct current -- Chapter 4. Explicit equations for inverse problems of electromagnetic field -- Bibliography

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Autore	Sarge Stefan Mathias
Titolo	Calorimetry : fundamentals, instrumentation and applications / / Stefan M. Sarge, Gunther W. H. Hohne and Wolfgang Hemminger
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Nota di contenuto	Calorimetry: Fundamentals, Instrumentation and Applications; Contents; Preface; List of Quantities and Units; Introduction: Calorimetry: Definition, Application Fields and Units; Definition of Calorimetry; Application Fields for Calorimetry; First Example from Life Sciences; Second Example from Material Science; Third Example from Legal Metrology; Units; Further Reading; References; Part One: Fundamentals of Calorimetry; 1 Methods of Calorimetry; 1.1 Compensation of the Thermal Effect; 1.1.1 Compensation by a Phase Transition; 1.1.2 Compensation by Electric Effects 1.2 Measurement of Temperature Differences 1.2.1 Measurement of Time-Dependent Temperature Differences; 1.2.2 Measurement of Local Temperature Differences; 1.2.2.1 First Example: Flow Calorimeter; 1.2.2.2 Second Example: Heat Flow Rate Calorimeter; 1.3 Summary of Measuring Principles; References; 2 Measuring Instruments; 2.1 Measurement of Amount of Substance; 2.1.1 Weighing; 2.1.2 Volume Measurement; 2.1.3 Pressure Measurement; 2.1.4 Flow Measurement; 2.2 Measurement of Electric Quantities; 2.3 Measurement of

Temperatures; 2.3.1 Thermometers; 2.3.1.1 Liquid-in-Glass Thermometers
2.3.1.2 Gas Thermometers 2.3.1.3 Vapor Pressure Thermometers; 2.3.1.4 Resistance Thermometers; 2.3.1.5 Semiconductors; 2.3.1.6 Pyrometers; 2.3.2 Thermocouples; 2.4 Chemical Composition; References; 3 Fundamentals of Thermodynamics; 3.1 States and Processes; 3.1.1 Thermodynamic Variables (Functions of State); 3.1.2 Forms of Energy, Fundamental Form, and Thermodynamic Potential Function; 3.1.2.1 Fundamental Form; 3.1.2.2 Thermodynamic Potential Function; 3.1.3 Equilibrium; 3.1.4 Reversible and Irreversible Processes; 3.1.5 The Laws of Thermodynamics; 3.1.5.1 The Zeroth Law; 3.1.5.2 The First Law
3.1.5.3 The Second Law 3.1.5.4 The Third Law; 3.1.6 Measurement of Thermodynamic State Functions; 3.2 Phases and Phase Transitions; 3.2.1 Multiphase Systems; 3.2.2 Phase Transitions; 3.2.3 Gibbs Phase Rule; 3.2.4 Measurement of Variables of State during Phase Transitions; References; 4 Heat Transport Phenomena; 4.1 Heat Conduction; 4.2 Convection; 4.3 Heat Radiation; 4.4 Heat Transfer; 4.5 Entropy Increase during Heat Exchange; 4.6 Conclusions Concerning Calorimetry; References; 5 Surroundings and Operating Conditions; 5.1 The Isothermal Condition; 5.2 The Isoperibol Condition
5.3 The Adiabatic Condition 5.4 The Scanning Condition; Reference; 6 Measurements and Evaluation; 6.1 Consequences of Temperature Relaxation within the Sample; 6.1.1 First Example: Chemical Reaction; 6.1.2 Second Example: Biological System; 6.1.3 Third Example: First-Order Phase Transitions; 6.2 Typical Results from Different Calorimeters; 6.2.1 Adiabatic Calorimeters; 6.2.2 Isoperibol Calorimeters; 6.2.3 Differential Scanning Calorimeters; 6.3 Reconstruction of the True Sample Heat Flow Rate from the Measured Function; 6.3.1 Reconstruction of the Temperature Field for Negative Times
6.3.2 The Convolution Integral and Its Validity

Sommario/riassunto

Clearly divided into three parts, this practical book begins by dealing with all fundamental aspects of calorimetry. The second part looks at the equipment used and new developments. The third and final section provides measurement guidelines in order to obtain the best results. The result is optimized knowledge for users of this technique, supplemented with practical tips and tricks.