1. Record Nr. UNINA9910462805403321

Autore	Long L. T (Leland Timothy)
Titolo	Acquisition and analysis of terrestrial gravity data / / Leland Timothy Long, Ronald Douglas Kaufmann [[electronic resource]]
Pubbl/distr/stampa	Cambridge : , : Cambridge University Press, , 2013
ISBN	1-139-61069-4 1-107-23610-X 1-107-25459-0 1-139-61255-7 1-139-62185-8 1-283-94370-0 1-139-62557-8 1-139-16228-4 1-139-61627-7
Descrizione fisica	1 online resource (x, 171 pages) : digital, PDF file(s)
Disciplina	526/.7
Soggetti	Gravity anomalies - Measurement Geophysical surveys Earth (Planet) Crust
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Title from publisher's bibliographic system (viewed on 05 Oct 2015).
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Machine generated contents note: List of symbols; 1. Gravitational attraction; 2. Instruments and data reduction; 3. Field acquisition of gravity data; 4. Graphical representation of the anomalous field; 5. Manipulation of the gravity field; 6. Interpretation of density structure; 7. Direct inversion; 8. Experimental isostasy; References; Index.
Sommario/riassunto	Gravity surveys have a huge range of applications, indicating density variations in the subsurface and identifying man-made structures, local changes of rock type or even deep-seated structures at the crust/mantle boundary. This important one-stop book combines an introductory manual of practical procedures with a full explanation of analysis techniques, enabling students, geophysicists, geologists and engineers to understand the methodology, applications and limitations

	of a gravity survey. Filled with examples from a wide variety of acquisition problems, the book instructs students in avoiding common mistakes and misconceptions. It explores the increasing near-surface geophysical applications being opened up by improvements in instrumentation and provides more advance-level material as a useful introduction to potential theory. This is a key text for graduate students of geophysics and for professionals using gravity surveys, from civil engineers and archaeologists to oil and mineral prospectors and geophysicists seeking to learn more about the Earth's deep interior.

2. Record Nr. UNINA9910789208203321

Autore	Rüeger Jean M
Titolo	Electronic Distance Measurement [[electronic resource]] : An Introduction / / by Jean M. Rüeger
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 1996
ISBN	3-642-80233-8
Edizione	[4th ed. 1996.]
Descrizione fisica	1 online resource (XIX, 276 p.)
Disciplina	526/.028
Soggetti	Geophysics Geographical information systems Solid state physics Spectroscopy Microscopy Geophysics/Geodesy Geographical Information Systems/Cartography Solid State Physics Spectroscopy and Microscopy
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"With 56 Figures and 18 Tables."
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	1 History -- 2 Physical Laws and Units Related to EDM -- 2.1 Definitions -- 2.2 Frequency Spectrum -- 2.3 Velocity of Light in a

Vacuum -- 2.4 Units and Their Definitions -- 3 Principles and Applications of EDM -- 3.1 Pulse Method -- 3.2 Phase Difference Method -- 3.3 Doppler Methods -- 3.4 Interferometry -- 4 Basic Working Principles of Electronic Distance Meters -- 4.1 Electro-Optical Instruments -- 4.2 Microwave Instruments -- 5 Propagation of Electromagnetic Waves Through the Atmosphere -- 5.1 Atmospheric Transmittance -- 5.2 Range of EDM Instruments -- 5.3 Phase Refractive Index -- 5.4 Group Refractive Index of Light and NIR Waves for Standard Conditions -- 5.5 Group Refractive Index of Light and NIR Waves at Ambient Conditions -- 5.6 Refractive Index of Microwaves -- 5.7 Coefficient of Refraction -- 5.8 Measurement of Atmospheric Parameters -- 5.9 Determination of the Refractive Index -- 6 Velocity Corrections to Measured Distances -- 6.1 Reference Refractive Index -- 6.2 First Velocity Correction -- 6.3 Real-Time Application of First Velocity Correction by EDM Instrument -- 6.4 Second Velocity Correction -- 6.5 Refined Method of Reduction of Measured Distance to Wave Path Chord -- 7 Geometrical Corrections -- 7.1 Reduction to the Spheroid Using Station Heights -- 7.2 Reduction to the Spheroid, Using Measured Zenith Angles -- 8 Miscellaneous Corrections, Computations and Numerical Examples -- 8.1 Correction of Measured Distance to Zenith Angle Ray Path -- 8.2 Eye-to-Object Corrections for Zenith Angles and Distances -- 8.3 Height Difference from Measured Zenith Angle(s) and Slope Distance -- 8.4 Determination of the Coefficient of Refraction from Reciprocal Zenith Angle Measurements -- 8.5 Reduction to Centre of Distances -- 8.6 Numerical Examples -- 9 Electro-Optical Distance Meters -- 9.1 Classification of Electro-Optical Distance Meters -- 9.2 Design of Some Electro-Optical Distance Meters -- 10 Reflectors -- 10.1 Introduction -- 10.2 Glass Prism Reflectors -- 11 Batteries and Other Power Sources -- 11.1 Review of Power Sources -- 11.2 Batteries Used in EDM -- 11.3 Sealed Nickel-Cadmium Batteries -- 12 Errors of Electro-Optical Distance Meters -- 12.1 Additive Constant -- 12.2 Short Periodic Errors -- 12.3 Scale Errors -- 12.4 Non-Linear Distance-Dependent Errors -- 12.5 Summary and Mathematical Model of Errors -- 13 Calibration of Electro-Optical Distance Meters -- 13.1 Introduction -- 13.2 Calibration on EDM Baselines -- 13.3 Calibration on Cyclic Error Testlines -- 13.4 Calibration of Modulation Frequency -- 13.5 Accuracy Specifications of EDM Instruments -- Appendices -- A. First Velocity Correction for Precise Electro-Optical Distance Measurement -- B. Tables of Saturation Water Vapour Pressures -- C. Parameters of the ICAO Standard Atmosphere -- D. Data of a Selection of Electro-Optical Distance Meters as Required for the Derivation of the First Velocity Correction and for Calibration Purposes -- E. Technical Data of a Selection of Short Range Distance Meters -- F. Technical Data of a Selection of Pulse Distance Meters -- G. Technical Data of a Selection of Long Range Distance Meters -- H. Critical Dimensions of a Selection of Reflectors -- References.

Sommario/riassunto

Electronic Distance Measurement This text gives an up-to-date introduction into electronic distance measurement (EDM) with a comprehensive review of modern equipment and procedures. It is excellently suited as a text for undergraduate and graduate students and an invaluable reference for practicing surveyors, geodesists and other scientists using EDM as a measuring tool. This fourth edition of a text first published in Sydney in 1978 is based on Rüeger's teaching experience at the University of New South Wales in Sydney, Australia. Introductory chapters provide an overview of relevant laws of physics and basic principles of different types of EDM instruments. The following chapters examine velocity corrections, derive geometrical

reductions from first principles and explain the design of state-of-the-art electro-optical distance meters. The final chapters introduce reflectors, power sources and instrument errors, and conclude with measurement and analysis procedures for the calibration of distance meters.