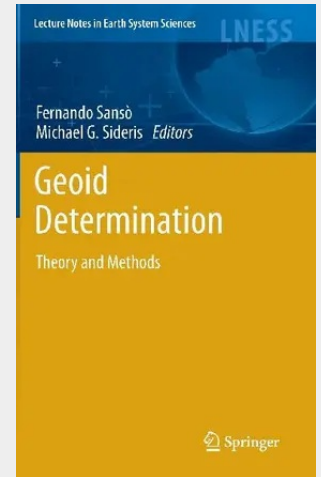


Geoid Determination

Theory and Methods

This book will be based on the material of the lecture notes in several International Schools for the Determination and Use of the Geoid, organized by the International Geoid Service of the International Association of Geodesy. It consolidates, unifies, and streamlines this material in a unique way not covered by the few other books that exist on this subject. More specifically, the book presents (for the first time in a single volume) the theory and methodology of the most common technique used for precise determination of the geoid, including the computation of the marine geoid from satellite altimetry data. These are illustrated by specific examples and actual computations of local geoids. In addition, the book provides the fundamentals of estimating orthometric heights without spirit levelling, by properly combining a geoid with heights from GPS. Besides the geodetic and geophysical uses, this last application has made geoid computation methods very popular in recent years because the entire GPS and GIS user communities are interested in estimating geoid undulations in order to convert GPS heights to physically meaningful orthometric heights (elevations above mean sea level). The overall purpose of the book is, therefore, to provide the user community (academics, graduate students, geophysicists, engineers, oceanographers, GIS and GPS users, researchers) with a self-contained textbook, which will supply them with the complete roadmap of estimating geoid undulations, from the theoretical definitions and formulas to the available numerical methods and their implementation and the test in practice.

This book will be based on the material of the lecture notes in several International Schools for the Determination and Use of the Geoid, organized by the International Geoid Service of the International Association of Geodesy. It consolidates, unifies, and streamlines this material in a unique way not covered by the few other books that exist on this subject. More specifically, the book presents (for the first time in a single volume) the theory and methodology of the most common technique used for precise determination of the geoid, including the computation of the marine geoid from satellite altimetry data. These are illustrated by specific examples and actual computations of local geoids. In addition, the book provides the fundamentals of estimating orthometric heights without spirit levelling, by properly combining a geoid with heights from GPS. Besides the geodetic and geophysical uses, this last application has made geoid computation methods very popular in recent years because the entire GPS and GIS user communities are interested in estimating geoid undulations in order to convert GPS heights to physically meaningful orthometric heights (elevations above mean sea level). The overall purpose of the book is, therefore, to provide the user community (academics, graduate students, geophysicists, engineers, oceanographers, GIS and GPS users, researchers) with a self-contained textbook, which will supply them with the complete roadmap of estimating geoid undulations, from the theoretical definitions and formulas to the available numerical methods and their implementation and the test in practice.



320,99 €

299,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9783540746997

Medium: Buch

ISBN: 978-3-540-74699-7

Verlag: Springer

Erscheinungstermin: 23.02.2013

Sprache(n): Englisch

Auflage: 2013

Serie: Lecture Notes in Earth System Sciences

Produktform: Gebunden

Gewicht: 13838 g

Seiten: 734

Format (B x H): 160 x 241 mm

