

**Bernhard Hofmann-Wellenhof,  
Herbert Lichtenegger,  
James Collins**

## **Global Positioning System**

Theory and Practice

This new edition accommodates the most recent advances in GPS technology. Updated or new information has been included although the overall structure essentially conforms to the former editions. The textbook explains in comprehensive manner the concepts of GPS as well as the latest applications in surveying and navigation. Description of project planning, observation, and data processing is provided for novice GPS users. Special emphasis is put on the modernization of GPS covering the new signal structure and improvements in the space and the control segment. Furthermore, the augmentation of GPS by satellite-based and ground-based systems leading to future Global Navigation Satellite Systems (GNSS) is discussed.

### **Review of the 4th edition**

"... Although developed as a classroom text, the book is also useful as a reference source for professional surveyors and other GPS users. This because it covers both GPS fundamentals and leadingedge developments, thus giving it a wide appeal that will clearly satisfy a broad range of GPS-philes ... The volume cogently presents the critical aspects and issues for users, along with the theory and details needed by students and developers alike. For those seriously entering the rapidly changing GPS field, this book is a good place to start."

GPS WORLD

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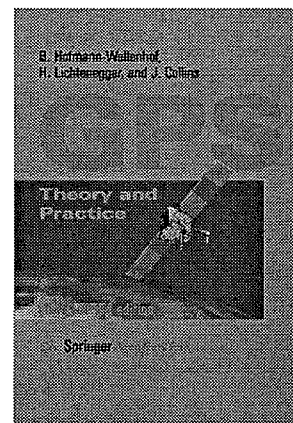
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## **GNSS – Global Navigation Satellite Systems**

GPS, GLONASS, Galileo & more

“GNSS – GPS, GLONASS, Galileo & more” is the extension of the scientific bestseller “GPS – Theory and Practice” to Global Navigation Satellite Systems (GNSS) by including the Russian GLONASS, the European system Galileo, and additional systems.

As long as possible, the book refers to GNSS in the generic sense to describe the reference systems for coordinates and time, the satellite orbits, the satellite signals, observables, mathematical models for positioning, data processing, and data transformation. With respect to the individual systems GPS, GLONASS, Galileo & more, primarily the specific reference systems, the services, the space and the control segment, as well as the satellite signals are described. Furthermore, augmentations by space- and ground-based systems are discussed.

This book is a university-level introductory textbook and is intended to serve as a reference for students as well for professionals and scientists in the fields of geodesy, surveying engineering, navigation, and related disciplines.

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