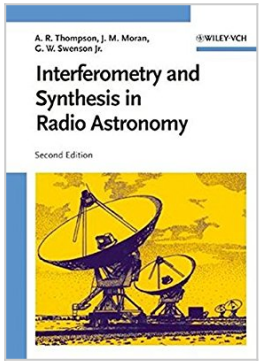

Interferometry and Synthesis in Radio Astronomy

By A. Richard Thompson, James M. Moran, George W. Swenson Jr.

Interferometry and Synthesis in Radio Astronomy By A. Richard Thompson, James M. Moran, George W. Swenson Jr.

Comprehensive, authoritative coverage of interferometric techniques for radio astronomy

In this Second Edition of Interferometry and Synthesis in Radio Astronomy, three leading figures in the development of large imaging arrays, including very-long-baseline interferometry (VLBI), describe and explain the technology that provides images of the universe with an angular resolution as fine as 1/20,000 of an arcsecond.

This comprehensive volume begins with a historical review followed by detailed coverage of the theory of interferometry and synthesis imaging, analysis of interferometer response, geometrical relationships, polarimetry, antennas, and arrays. Discussion of the receiving system continues with analysis of the response to signals and noise, analog design requirements, and digital signal processing.

The authors detail special requirements of VLBI including atomic frequency standards, broadband recording systems, and antennas in orbit. Further major topics include:
* Calibration of data and synthesis of images
* Image enhancement using nonlinear algorithms
* Techniques for astrometry and geodesy
* Propagation in the neutral atmosphere and ionized media
* Radio interference
* Related techniques: intensity interferometry, moon occultations, antenna holography, and optical interferometry

Interferometry and Synthesis in Radio Astronomy, Second Edition is comprehensive in that it provides an excellent overview of most radio astronomical instrumentation and techniques.

Interferometry and Synthesis in Radio Astronomy

By A. Richard Thompson, James M. Moran, George W. Swenson Jr.

Interferometry and Synthesis in Radio Astronomy By A. Richard Thompson, James M. Moran, George W. Swenson Jr.

Comprehensive, authoritative coverage of interferometric techniques for radio astronomy

In this Second Edition of Interferometry and Synthesis in Radio Astronomy, three leading figures in the development of large imaging arrays, including very-long-baseline interferometry (VLBI), describe and explain the technology that provides images of the universe with an angular resolution as fine as 1/20,000 of an arcsecond.

This comprehensive volume begins with a historical review followed by detailed coverage of the theory of interferometry and synthesis imaging, analysis of interferometer response, geometrical relationships, polarimetry, antennas, and arrays. Discussion of the receiving system continues with analysis of the response to signals and noise, analog design requirements, and digital signal processing.

The authors detail special requirements of VLBI including atomic frequency standards, broadband recording systems, and antennas in orbit. Further major topics include:
* Calibration of data and synthesis of images
* Image enhancement using nonlinear algorithms
* Techniques for astrometry and geodesy
* Propagation in the neutral atmosphere and ionized media
* Radio interference
* Related techniques: intensity interferometry, moon occultations, antenna holography, and optical interferometry

Interferometry and Synthesis in Radio Astronomy, Second Edition is comprehensive in that it provides an excellent overview of most radio astronomical instrumentation and techniques.

Interferometry and Synthesis in Radio Astronomy By A. Richard Thompson, James M. Moran, George W. Swenson Jr. Bibliography

- Sales Rank: #2041347 in Books
- Published on: 2001-04-25
- Original language: English
- Number of items: 1
- Dimensions: 9.59" h x 1.90" w x 7.11" l, 3.28 pounds
- Binding: Hardcover
- 715 pages

Editorial Review

Review
"this edition meets current demands by providing a comprehensive account of the techniques used today." (La Doc STI, May 2001)

"...the up-to-date edition of Thompson...with its exhaustive bibliography, becomes the indispensable source of background for those already in, or considering, radio astronomy." (The Observatory, Vol. 122, No. 1166, February 2002)

From the Back Cover
Comprehensive, authoritative coverage of interferometric techniques for radio astronomy

In this Second Edition of *Interferometry and Synthesis in Radio Astronomy*, three leading figures in the development of large imaging arrays, including very-long-baseline interferometry (VLBI), describe and explain the technology that provides images of the universe with an angular resolution as fine as 1/20,000 of an arcsecond.

This comprehensive volume begins with a historical review followed by detailed coverage of the theory of interferometry and synthesis imaging, analysis of interferometer response, geometrical relationships, polarimetry, antennas, and arrays. Discussion of the receiving system continues with analysis of the response to signals and noise, analog design requirements, and digital signal processing.

The authors detail special requirements of VLBI including atomic frequency standards, broadband recording systems, and antennas in orbit. Further major topics include:

- Calibration of data and synthesis of images
- Image enhancement using nonlinear algorithms
- Techniques for astrometry and geodesy
- Propagation in the neutral atmosphere and ionized media
- Radio interference
- Related techniques: intensity interferometry, moon occultations, antenna holography, and optical interferometry

Interferometry and Synthesis in Radio Astronomy, Second Edition is comprehensive in that it provides an excellent overview of most radio astronomical instrumentation and techniques.

About the Author
A. RICHARD THOMPSON, PhD, has been associated with the National Radio Astronomy Observatory in numerous capacities for more than 27 years.

JAMES M. MORAN, PhD, is a senior scientist at the Smithsonian Astrophysical Observatory and Professor of Astronomy at Harvard University.

GEORGE W. SWENSON, Jr., PhD, is Professor Emeritus of Electrical Engineering and of Astronomy at the University of Illinois at Urbana-Champaign.

Users Review

From reader reviews:

Jack Lau:

The book Interferometry and Synthesis in Radio Astronomy gives you the sense of being enjoy for your spare time. You may use to make your capable considerably more increase. Book can to be your best friend when you getting pressure or having big problem along with your subject. If you can make examining a book Interferometry and Synthesis in Radio Astronomy to get your habit, you can get considerably more advantages, like add your current capable, increase your knowledge about several or all subjects. You could know everything if you like wide open and read a guide Interferometry and Synthesis in Radio Astronomy. Kinds of book are a lot of. It means that, science reserve or encyclopedia or other individuals. So , how do you think about this guide?

John Glass:

Spent a free time to be fun activity to complete! A lot of people spent their leisure time with their family, or their own friends. Usually they accomplishing activity like watching television, about to beach, or picnic from the park. They actually doing same thing every week. Do you feel it? Will you something different to fill your own free time/ holiday? Can be reading a book is usually option to fill your no cost time/ holiday. The first thing that you will ask may be what kinds of e-book that you should read. If you want to try out look for book, may be the reserve untitled Interferometry and Synthesis in Radio Astronomy can be great book to read. May be it could be best activity to you.

Patricia Cockrell:

The book untitled Interferometry and Synthesis in Radio Astronomy contain a lot of information on it. The writer explains the woman idea with easy approach. The language is very straightforward all the people, so do not worry, you can easy to read this. The book was written by famous author. The author provides you in the new period of time of literary works. You can easily read this book because you can continue reading your smart phone, or model, so you can read the book inside anywhere and anytime. In a situation you wish to purchase the e-book, you can start their official web-site and also order it. Have a nice read.

Sherri King:

Many people spending their moment by playing outside with friends, fun activity along with family or just watching TV all day long. You can have new activity to spend your whole day by examining a book. Ugh, think reading a book can definitely hard because you have to bring the book everywhere? It all right you can have the e-book, having everywhere you want in your Cell phone. Like Interferometry and Synthesis in Radio Astronomy which is obtaining the e-book version. So , try out this book? Let's find.

Read Interferometry and Synthesis in Radio Astronomy By A. Richard Thompson, James M. Moran, George W. Swenson Jr. for online ebook

Interferometry and Synthesis in Radio Astronomy By A. Richard Thompson, James M. Moran, George W. Swenson Jr. Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Interferometry and Synthesis in Radio Astronomy By A. Richard Thompson, James M. Moran, George W. Swenson Jr. books to read online.

Online Interferometry and Synthesis in Radio Astronomy By A. Richard Thompson, James M. Moran, George W. Swenson Jr. ebook PDF download

Interferometry and Synthesis in Radio Astronomy By A. Richard Thompson, James M. Moran, George W. Swenson Jr. Doc

Interferometry and Synthesis in Radio Astronomy By A. Richard Thompson, James M. Moran, George W. Swenson Jr. Mobipocket

Interferometry and Synthesis in Radio Astronomy By A. Richard Thompson, James M. Moran, George W. Swenson Jr. EPub