



Interferometry and Synthesis in Radio Astronomy

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

Download now

Read Online ➔

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.

 [**Download** Interferometry and Synthesis in Radio Astronomy ...pdf](#)

 [**Read Online** Interferometry and Synthesis in Radio Astronomy ...pdf](#)

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

 [Download Interferometry and Synthesis in Radio Astronomy ...pdf](#)

 [Read Online Interferometry and Synthesis in Radio Astronomy ...pdf](#)

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

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:

Nancy Tandy:

Why don't make it to be your habit? Right now, try to ready your time to do the important action, like looking for your favorite e-book and reading a reserve. Beside you can solve your long lasting problem; you can add your knowledge by the publication entitled Interferometry and Synthesis in Radio Astronomy. Try to face the book Interferometry and Synthesis in Radio Astronomy as your friend. It means that it can for being your friend when you feel alone and beside that of course make you smarter than in the past. Yeah, it is very fortunated for yourself. The book makes you considerably more confidence because you can know anything by the book. So , let me make new experience and knowledge with this book.

Zachary Foushee:

In other case, little folks like to read book Interferometry and Synthesis in Radio Astronomy. You can choose the best book if you want reading a book. So long as we know about how is important the book Interferometry and Synthesis in Radio Astronomy. You can add expertise and of course you can around the world by the book. Absolutely right, mainly because from book you can know everything! From your country right up until foreign or abroad you will be known. About simple issue until wonderful thing you are able to know that. In this era, we can easily open a book as well as searching by internet gadget. It is called e-book. You may use it when you feel bored stiff to go to the library. Let's learn.

Richard Barbosa:

Reading can called brain hangout, why? Because if you are reading a book specially book entitled Interferometry and Synthesis in Radio Astronomy your mind will drift away trough every dimension, wandering in each and every aspect that maybe unfamiliar for but surely will end up your mind friends. Imaging every single word written in a e-book then become one web form conclusion and explanation this maybe you never get just before. The Interferometry and Synthesis in Radio Astronomy giving you yet another experience more than blown away your mind but also giving you useful data for your better life with this era. So now let us show you the relaxing pattern is your body and mind are going to be pleased when you are finished studying it, like winning a sport. Do you want to try this extraordinary shelling out spare time activity?

Blanche Jackson:

Don't be worry in case you are afraid that this book will filled the space in your house, you may have it in e-book approach, more simple and reachable. This specific Interferometry and Synthesis in Radio Astronomy can give you a lot of pals because by you investigating this one book you have matter that they don't and make you more like an interesting person. This particular book can be one of one step for you to get success. This reserve offer you information that probably your friend doesn't learn, by knowing more than some other make you to be great men and women. So , why hesitate? Let me have Interferometry and Synthesis in Radio Astronomy.

Download and Read Online Interferometry and Synthesis in Radio Astronomy By A. Richard Thompson, James M. Moran, George W. Swenson Jr. #XYHD1FOQ7ZI

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

XYHD1FOQ7ZI: Interferometry and Synthesis in Radio Astronomy By A. Richard Thompson, James M. Moran, George W. Swenson Jr.