



Interferometry and Synthesis in Radio Astronomy

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

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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.

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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

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