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Frequency; Example of One-Dimensional Synthesis; 2.4 Two-Dimensional Synthesis
Projection-Slice Theorem
3 Analysis of the Interferometer Response; 3.1 Fourier Transform Relationship between Intensity and Visibility; 3.2 Cross-Correlation and the Wiener-Khinchin Relation; 3.3 Basic Response of the Receiving System; Antennas; Filters; Correlator; Response to the Incident Radiation; Appendix 3.1 Mathematical Representation of Noise-Like Signals; Analytic Signal; Truncated Function; 4 Geometric Relationships and Polarimetry; 4.1 Antenna Spacing Coordinates and (u, v) Loci; 4.2 (u', v') Plane; 4.3 Fringe Frequency; 4.4 Visibility Frequencies; 4.5 Calibration of the Baseline
4.6 Antenna Mounts
4.7 Beamwidth and Beam-Shape Effects; 4.8 Polarimetry; Parameters Defining Polarization; Antenna Polarization Ellipse; Stokes Visibilities; Instrumental Polarization; Matrix Formulation; Calibration of Instrumental Polarization; Appendix 4.1 Conversion Between Hour Angle-Declination and Azimuth-Elevation Coordinates; Appendix 4.2 Leakage Parameters in Terms of the Polarization Ellipse; Linear Polarization; Circular Polarization; 5 Antennas and Arrays; 5.1 Antennas; 5.2 Sampling the Visibility Function; Sampling Theorem; Discrete Two-Dimensional Fourier Transform
5.3 Introductory Discussion of Arrays
Phased Arrays and Correlator Arrays; Spatial Sensitivity and the Spatial Transfer Function; Meter-Wavelength Cross and T Arrays; 5.4 Spatial Transfer Function of a Tracking Array; Desirable Characteristics of the Spatial Transfer Function; Holes in the Spatial Frequency Coverage; 5.5 Linear Tracking Arrays; 5.6 Two-Dimensional Tracking Arrays; Open-Ended Configurations; Closed Configurations; VLBI Configurations; Orbiting VLBI Antennas; Planar Arrays; 5.7 Conclusions on Antenna Configurations; 5.8 Other Considerations; Sensitivity; Long Wavelengths
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Sommario/riassunto

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 interferomete
