Imaging Pipeline Software

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Abstract

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Acknowledgements

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Introduction

## Aperture Synthesis

The resolution of radio telescopes can be increased by using pairs of telescopes (baselines) and taking the product of the received signals. This resolution can be changed by increases the separation of the baseline, rather then increasing the size of the individual telescopes. This method popularized by the work of (Ryle & Hewish, 1960) states that using these baselines it produces “exactly the same result as that obtained by using the complete large aperture”. This technique allowed for cheaper production of much larger apertures and the eventual development of the techniques used now. These techniques gather Fourier domain data in the form of a visibility, however the way in which they are sampled is non-uniform so we must place it on a rectangular grid. This process is known as gridding and the methods used now are based on the work by (Brouw, 1975).

## Fourier Transform

## Gridding

## Deconvolution

Methods

Results

Discussion of Results

Conclusion

**References**

Ryle, M., & Hewish, A. (1960). The synthesis of large radio telescopes. *Monthly Notices of the Royal Astronomical Society, Vol. 120*, 220-230.

Appendix

1[Add footnotes, if any, on their own page following references. For APA formatting requirements, it’s easy to just type your own footnote references and notes. To format a footnote reference, select the number and then, on the Home tab, in the Styles gallery, click Footnote Reference. The body of a footnote, such as this example, uses the Normal text style. (Note: If you delete this sample footnote, don’t forget to delete its in-text reference as well. That’s at the end of the sample Heading 2 paragraph on the first page of body content in this template.)]