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## Rotation Measure Synthesis

*Tuesday, 26 July 2011 13:20 (40 minutes)*

I will describe the technique of Rotation Measure (RM) Synthesis for recovering polarisation images in Faraday Depth from multi-frequency radio data, and the parallels that exist with aperture synthesis.

RM Synthesis will be a powerful tool for all pathfinder telescopes of the Square Kilometre Array (SKA), where it will be vital for magnetism science.

In this talk I will describe specifically the current development of the RM Synthesis pipeline of the LOFAR telescope with reference to current early results.

Advanced imaging and deconvolution algorithms for recovery of Faraday Depth structure are a natural extension to such pipelines and I will highlight the applicability of advanced techniques, particularly that of compressed sensing, for the recovery of features such as the so-called Faraday Caustics caused by rapid reversals of the magnetic field along the line of sight.

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