

ABSTRACT**“Direction Finding With A Spinning Array”**

A method of determining the angle of arrival of a signal, the method comprising the steps of: providing a plurality of antennae; sampling, in turn, the output from each of the antennae, to obtain a set of samples, each of the samples relating to different points in time; performing a Fourier transform on the set of samples, thereby producing a sequence of spectral lines; identifying a signal impinging on the antennae from the configuration of the spectral lines; and calculating, from phase and amplitude data gathered from at least a subset of the spectral lines, the direction of arrival of the signal at the antennae.

The invention allows high resolution estimation of the directions of arrival of multiple signals with a single channel receiver employing a plurality of antennae which may be spatially separated or provided in substantially the same location as one another. The antenna sampling rate need only be $2N$ times the bandwidth of the impinging signals (N being the number of antennae), and direction finders operating in accordance with the invention may be inexpensive, compact and high-performance.

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