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*Title:* *A Study of Dolph-Chebyshev Spherical Phased Antenna Array for Wave Propagation and Aerospace Applications*

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***Abstract:***

*The spherical antenna array is a preferred choice for the applications where wide angle scanning is desired. The Dolph-Chebyshev method for beampattern design provides a minimum null-to-null beamwidth for a given sidelobe level. This distribution has direct control over the main-lobe width and maximum sidelobe level. In this report, an attempt is made to generate radiation pattern of spherical antenna array using Dolph-Chebyshev's amplitude distribution. The amplitude excitations are obtained by exploiting the similarity of Legendre polynomials, used for beampattern of spherical array and Chebyshev polynomials, used for Dolph-Chebyshev pattern. This has wide application in wave propagation and aerospace engineering.*