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A.1 Formulas and Algorithms : The Odd Case

A.1.1 Computation of b_n

The prototype linear array factor, a summation of cosines weighted by the relative excitations a_n , can be expressed in a polynomial form, with b_n the coefficients and $\cos^2 \psi$ the variable of the polynomial.

The prototype linear array is a $2Q+1$ element, uniformly spaced linear array with symmetrical excitation and with inter-element spacing d . The prototype linear array factor can be in the usual form (3.4) or in a polynomial form (3.6)

$$F_p(\psi) = \sum_{n=0}^Q G_n a_n \cos(n\psi) = \sum_{n=0}^Q b_n \cos^n \psi \quad (A.1)$$