

4.1.4 $\theta_0 = 0, \phi_0 = 0$, $N = 11, M = 11, d_x = d_y = \lambda/2$
 separable Dolph-chebyshev weights

- $w_{nm} = w_{x,n} w_{y,m}$. Pattern has -30 dB sidelobes along $u_x = 0, u_y = 0$ axes, -60 dB elsewhere
- Directivity, use (4.46)

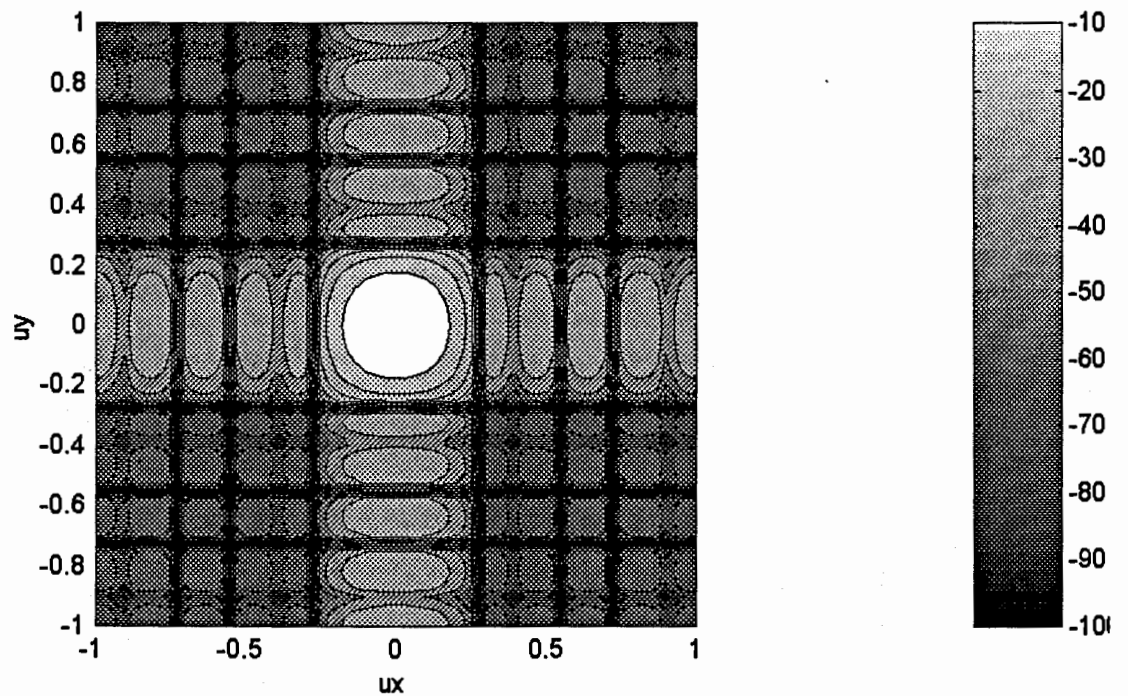
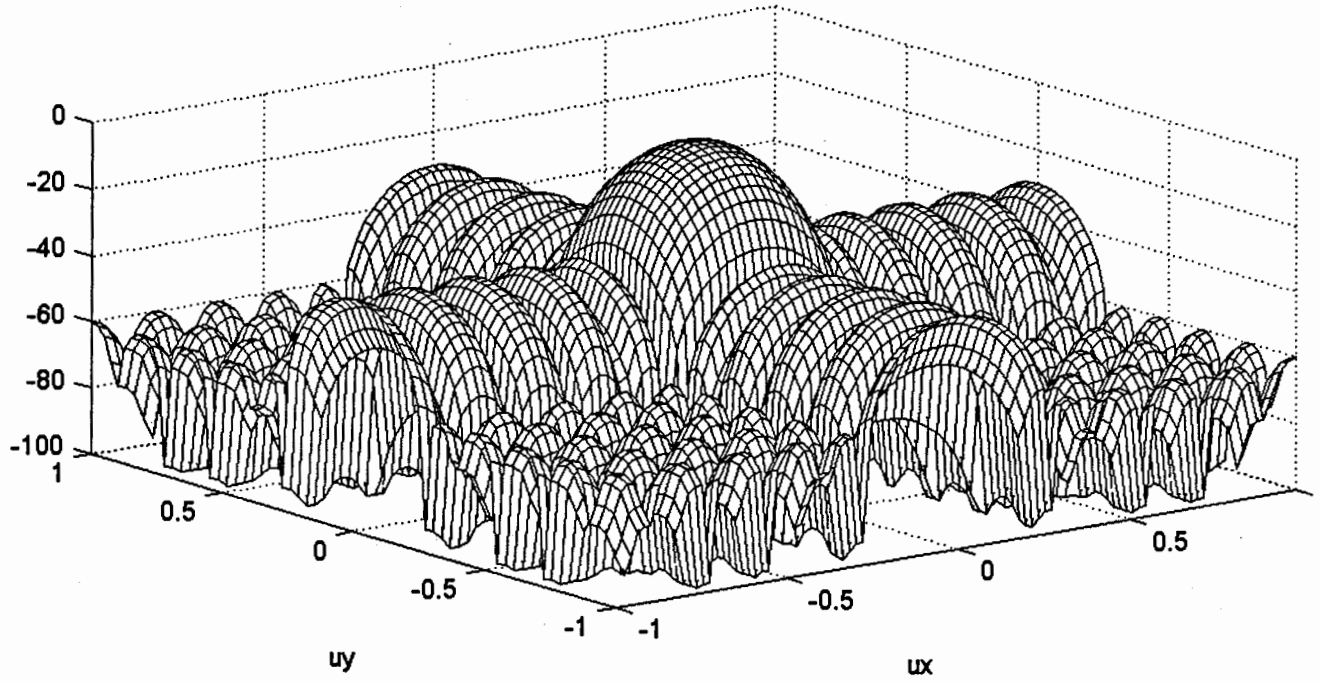
$$D = \frac{|w^H v(0,0)|^2}{w^H B w}$$

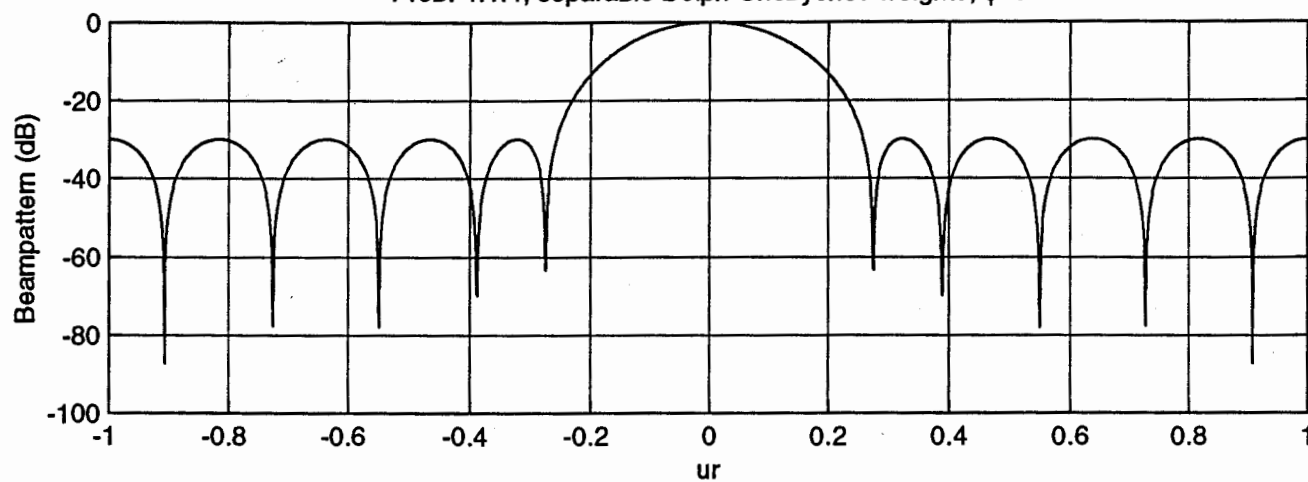
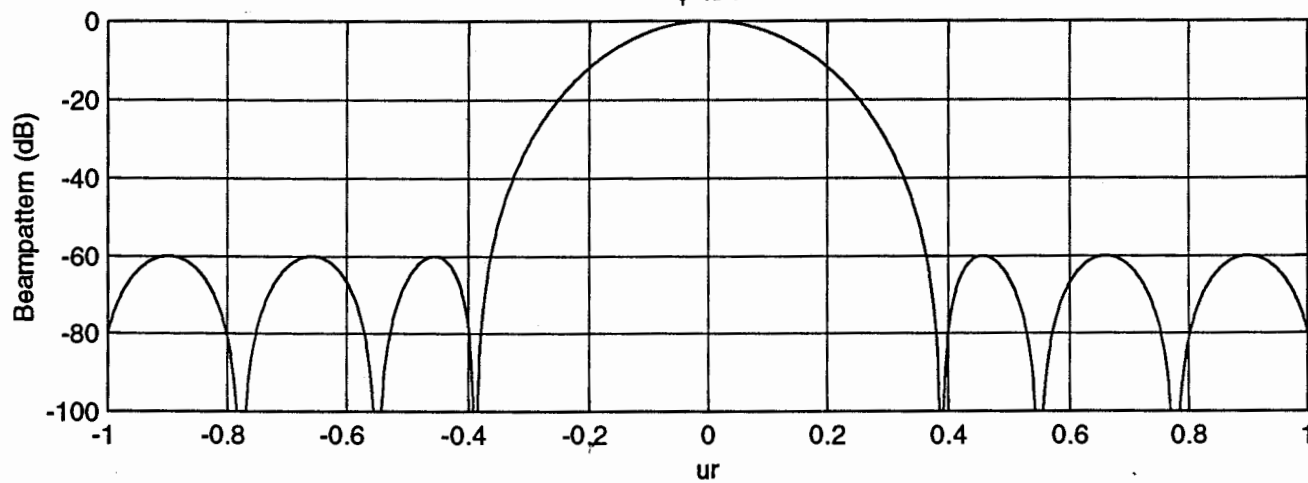
$$B_{kl} = \text{sinc}\left(\frac{2\pi}{\lambda} \rho_{kl}\right)$$

$$\rho_{kl} = d \sqrt{(n_k - n_l)^2 + (m_k - m_l)^2}$$

$$D = 135.6 = 21.3 \text{ dB}$$

Prob. 4.1.4, separable Dolph-Chebyshev weights



Prob. 4.1.4, separable Dolph-Chebyshev weights, $\phi=0$  $\phi=\pi/4$  $\phi=\pi/2$ 