

D7FARON3DS**3D diffraction pattern of a round aperture as a circular symmetric plot using two coordinates.**

Radius of aperture is a

The coordinate on the observation screen is R

Wavelength λ , distance from aperture to screen is X.

One may look at the plot from different angles, change colors, and make a "Contour Plot".

$$\begin{aligned} i &:= 0..N & j &:= 0..N \\ x_i &:= (-20) + 1.5001 \cdot i & y_j &:= -20 + 1.5001 \cdot j & \lambda &\equiv .0005 \end{aligned}$$

$$R(x, y) := \sqrt{(x)^2 + (y)^2}$$

$$N \equiv 30$$

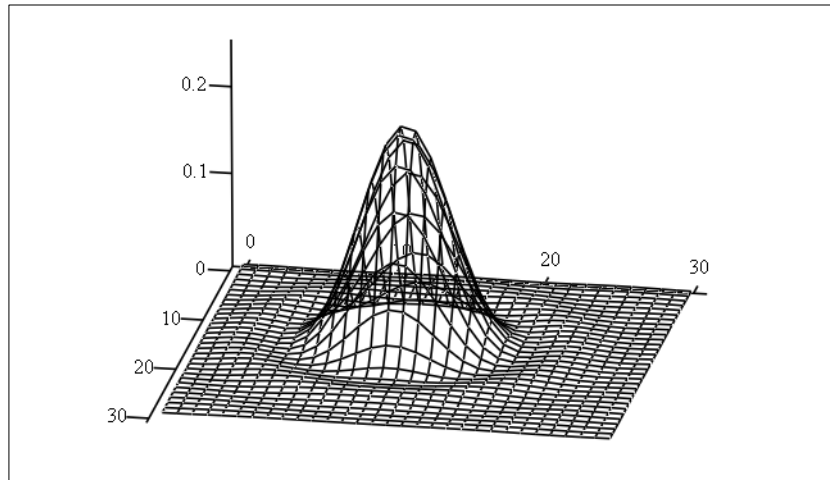
$$X := 4000$$

$$d \equiv 2$$

$$a \equiv 0.1$$

$$g(x, y) := \left[\frac{J_1 \left(2 \cdot \pi \cdot a \cdot \frac{R(x, y)}{X \cdot \lambda} \right)}{\left(2 \cdot \pi \cdot a \cdot \frac{R(x, y)}{X \cdot \lambda} \right)} \right]^2$$

$$M_{i,j} := g(x_i, y_j)$$



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