

$$a := 6 \cdot 0.0254 \quad f := 2000 \quad \omega := 2 \cdot \pi \cdot f \quad c := 343 \quad \rho := 1.21 \quad \lambda := \frac{c}{f} \quad \lambda = 0.172 \quad \frac{\lambda}{2 \cdot a} = 0.563$$

$$k := \frac{\omega}{c}$$

$$N := 2000 \quad i := 0, 1 \dots N \quad \theta_{\text{start}} := -90 \quad \theta_{\text{end}} := 90 \quad \theta_i := \frac{i}{N} \cdot (\theta_{\text{end}} - \theta_{\text{start}}) + \theta_{\text{start}}$$

$$H(\theta) := \text{if} \left(|\theta| < 0.000001, 1, 2 \cdot \frac{J_1(k \cdot a \cdot \sin(\theta))}{k \cdot a \cdot \sin(\theta)} \right)$$

$$k \cdot a = 5.583$$

