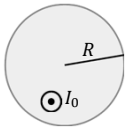
Example: A wire carries a current I_0. Determine the magnetic field everywhere.



Example: A transmitter emits a 5kW signal towards a circular antenna of radius 0.20m that is located 20km away. The signal is uniformly distributed within a narrow cone such that it passes through $\frac{1}{64}$ the area of a sphere centered on the transmitter.

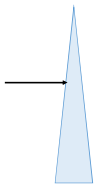
Example: $\text{P}_0 = 5\text{kW}$, $x_A = 20\text{km}$, $R_A = 0.20\text{m}$ and $A_{\text{signal}} = \frac{1}{64} A_{\text{sphere}}$. (a) Determine the energy density of the signal at the location of the antenna.

Example: $P_0 = 5\text{kW}$, $x_A = 20\text{km}$, $R_A = 0.20\text{m}$ and $A_{\text{signal}} = \frac{1}{64} A_{\text{sphere}}$. (b) Determine force on the antenna.

Example: $P_0 = 5\text{kW}$, $x_A = 20\text{km}$, $R_A = 0.20\text{m}$ and $A_{\text{signal}} = \frac{1}{64} A_{\text{sphere}}$. (c) How would the force be different if the signal were reflected?

Example: $P_0 = 5\text{kW}$, $x_A = 20\text{km}$, $R_A = 0.20\text{m}$ and $A_{\text{signal}} = \frac{1}{64} A_{\text{sphere}}$. (d) Determine the amplitude of the magnetic field at the location of the antenna.

White light passes through a narrow wedge as illustrated. Determine the angular spread of the outgoing light if $n_{\text{red}} = 1.315$ and $n_{\text{violet}} = 1.325$ in the wedge. The small angle of the wedge is $15°$. The other two angles are equal and the incoming light is parallel to the base of the wedge.



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