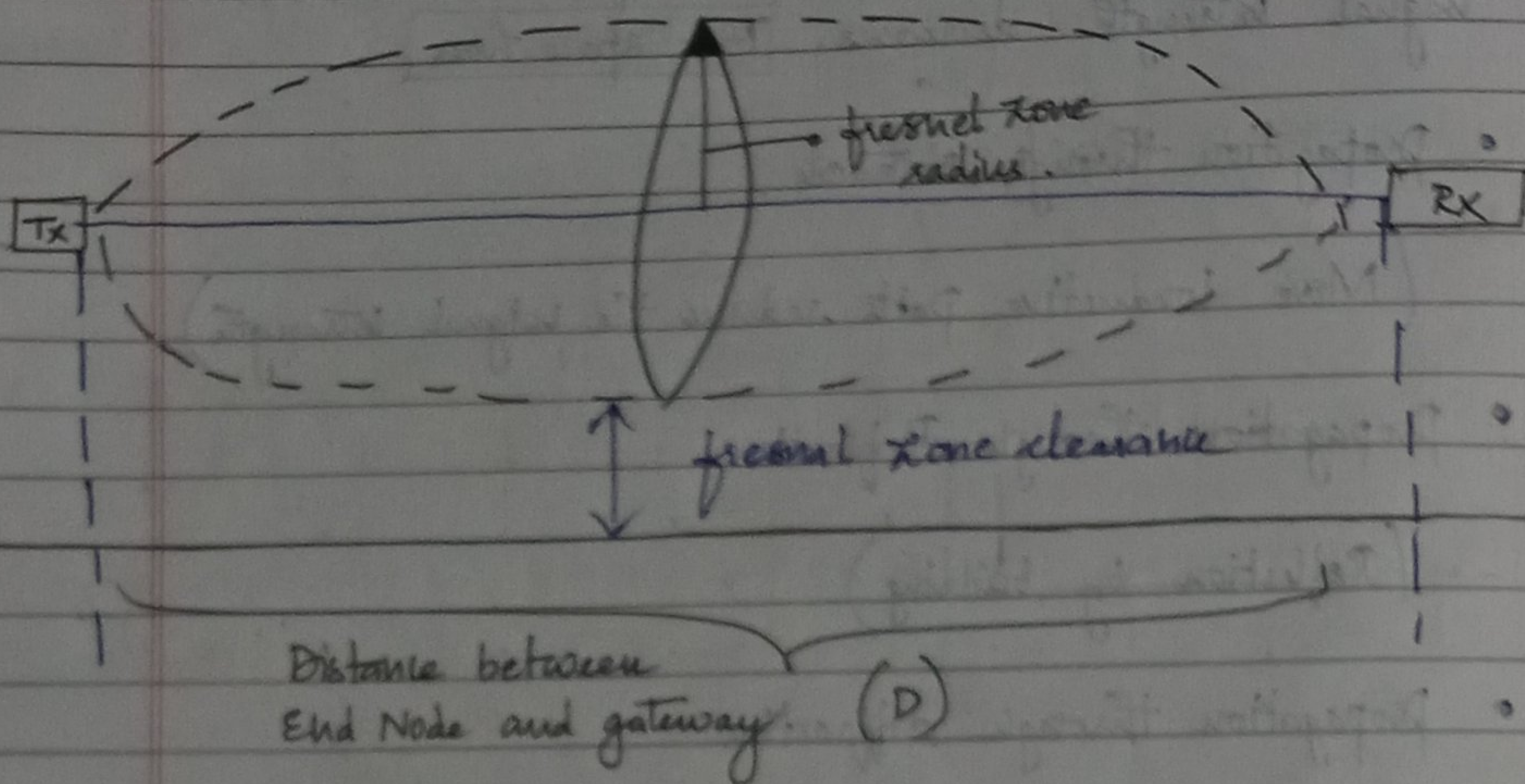


Tutorial 7: Fresnel Zone

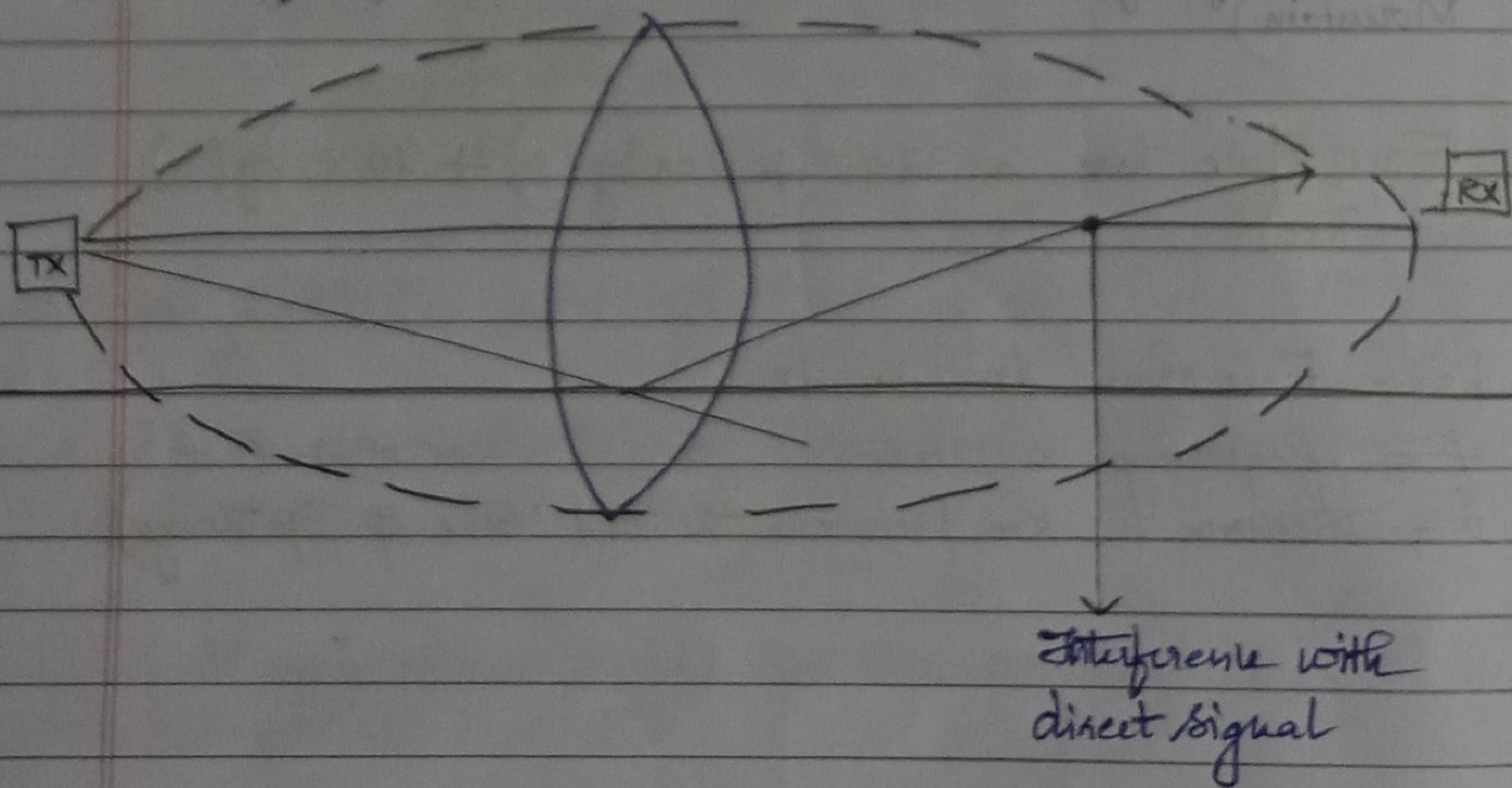
$$r = 8.657 \times \sqrt{D/f}$$

D = Distance in km

f = frequency in GHz



- If distance increase the radius increases.



[log on more]

$$(100\%) \quad \delta = 8.657 \times \sqrt{\frac{702(\text{km})}{0.868(4\text{Hz})}} = 3.09133 \times 8.657 = 26.76 \text{ (m)}$$

I need a 60% path without hitting ground; $\delta = 8.657 \times \sqrt{\frac{0.6 \times 702}{0.868}} = \sqrt{\frac{4032}{0.868}} \times 8.657$

$$20.09 \text{ m} = 203945 \times 8.657$$

$$= 20072 \text{ m}$$

$$H = 1000 \times D^2 / (8 \times \text{Radius}_{\text{Earth}}) = \frac{1000 \times (702)^2}{8 \times 8504} = \frac{511840}{68032} = 0.761 \text{ (m)}$$

702 km.

D. (km)	δ (m)	H (m)	$\delta + H$
702	2007 m	0.761	21.481 (m)

