

Sky Wave propagation:-

Sky wave propagation refers to the propagation of radio waves reflected or refracted back towards the earth.

The ionosphere is region of the upper atmosphere from about 80 km to 100 km in altitude, where neutral air is ionised by solar photons and cosmic rays. When high frequency signals enter the ionosphere obliquely, they are back scattered from the ionised layer as scattered waves.

If the mid layer ionisation is strong enough compared to the signal frequency, a scattered wave can exit the bottom of the layer earthwards as if reflected from a mirror. The signal may effectively bounce between the earth.

And ionosphere two or more times. Since at shallow incidence losses remain quite small. Signals of only a few watts can sometimes be received many thousands of miles away as a result. If the ionisation is not great enough, the scatter wave is initially deflected downwards and subsequently upwards such that it exits the top of the layer.

