Program

% Modelling of Two-ray ground reflection model

clear all;
clc;
fc=800*10^6;
c_light=3*10^8;
lamda=c_light/fc
Gt=1;
Gr=1;
Pt=1;
L=1;
ht=30;
hr=2;

d_tx_rx_km=1:10
d_tx_rx_m=d_tx_rx_km*10^3
PRG = Pt*Gt*Gr*ht^2*hr^2*(1./d_tx_rx_m).^4;
PRGD=10*log10(PRG);

disp(PRGD)
figure;
plot(d_tx_rx_km,PRGD,'-o')
xlabel('Distance between transmitter and receiver');
ylabel('Received Power(dB)');
title('Modelling of two-ray ground reflection model');
h = legend('two-ray Model',2);

PRF = Pt*Gt*Gr*(lamda/(4*pi))^2*(1/L)*(1./d_tx_rx_m).^2;