Subject Name: Wireless Communication

Subject Code: CSP311M

Name: Charvik Patel

Roll no: 1401079

Practical Number: 2

Aim: Write Matlab code of two radio propagation model (okumaras, Hata model) and Plot a Graph of frequency versus Path-loss and distance versus Path-loss

Brief Theory:

1. **Okumaras Model:**
2. **Hata Model:**

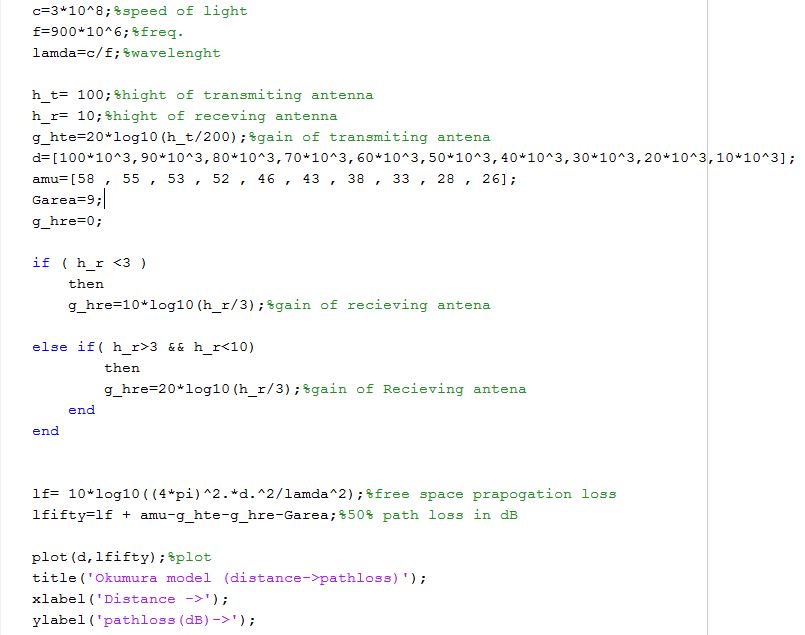
Urban Area:

Sub−Urban:

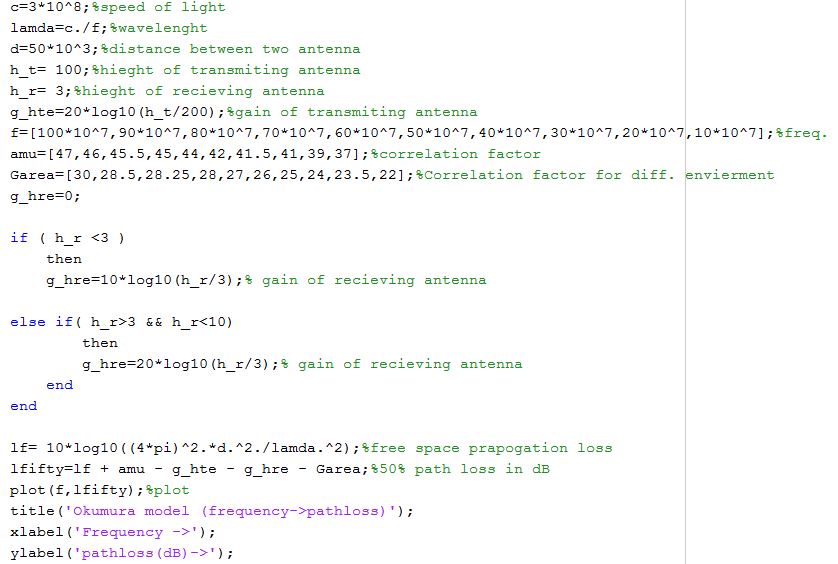
Open Area:

Matlab Code:

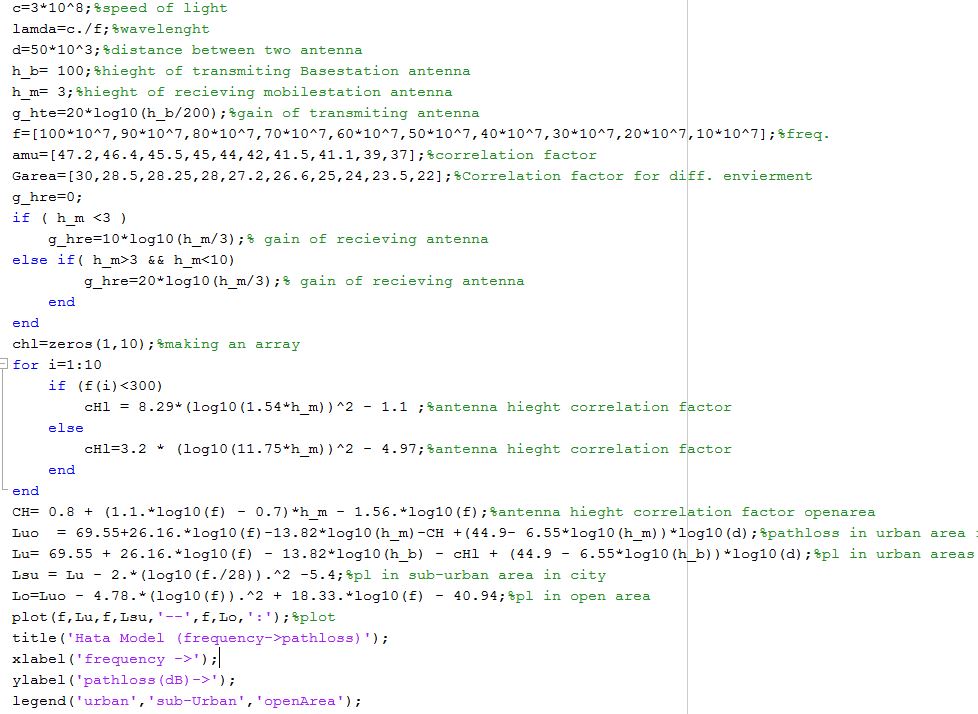
1. Okumaras (Distance -> Path-loss):



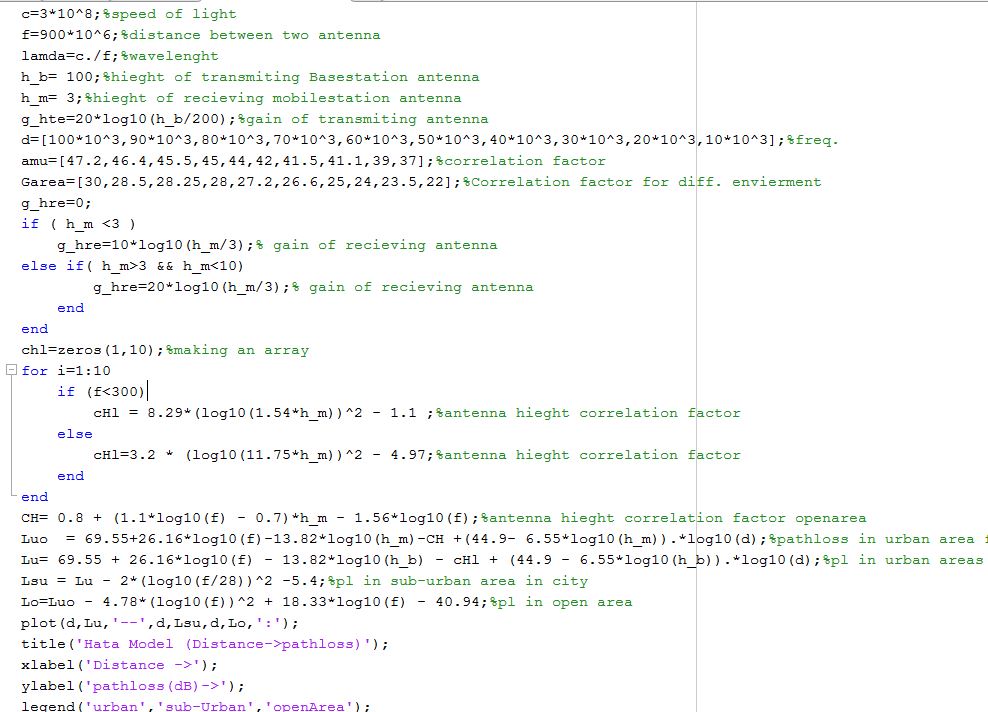
1. Okumaras (Frequency -> Path-loss):



1. Hata (Frequency -> Path-Loss):

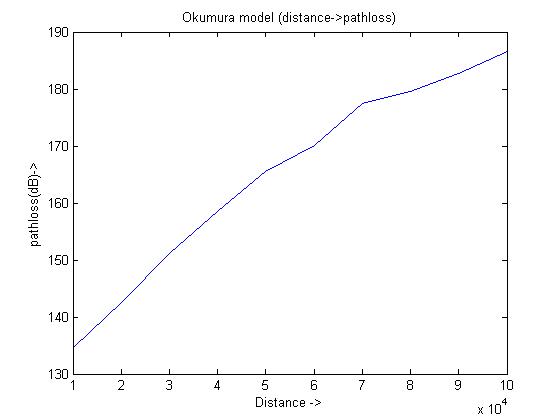


1. Hata (Distance -> Path-Loss):

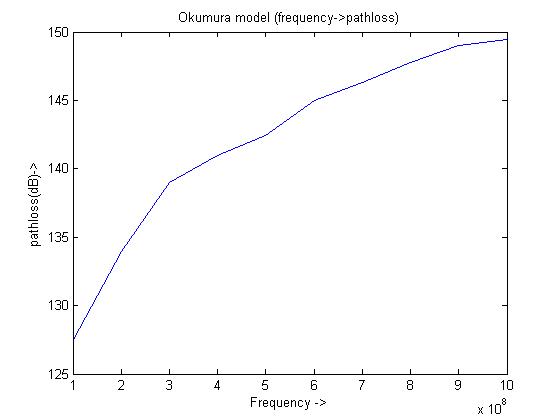


Output:

1. Okumaras (Distance -> Path-loss):



1. Okumaras (Frequency -> Path-loss):



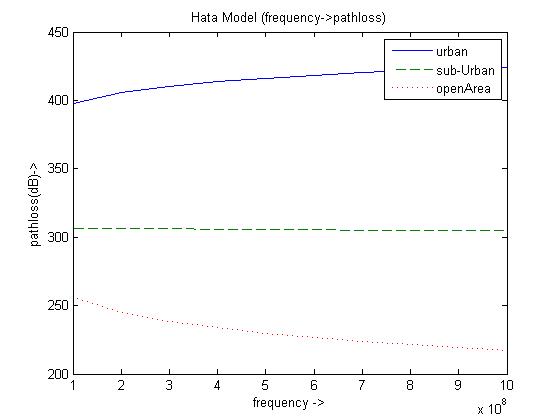
1. Hata (Frequency -> Path-Loss): 

Figure Sub-Urban Graph is Decressing Minor

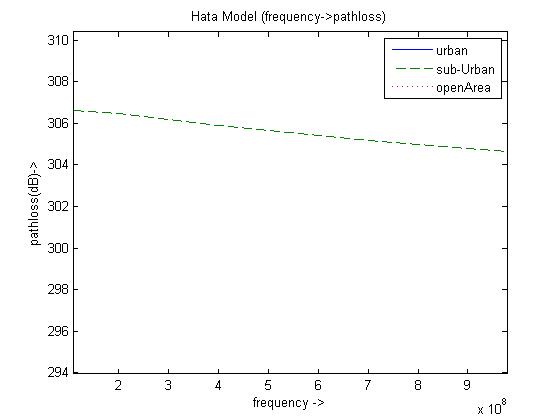
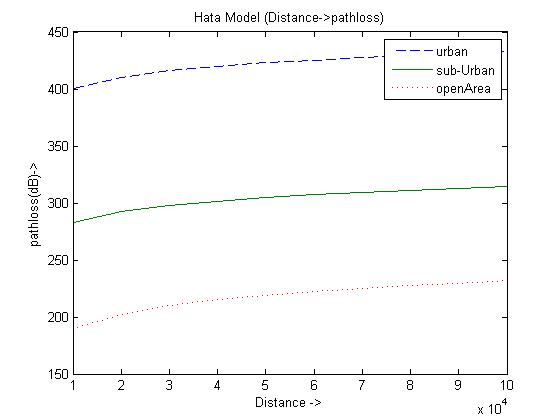


Figure Close-up look of sub-urban

1. Hata (Distance -> Path-Loss):

Result Interpretation:

As Distance Increases between Receiving Antenna and Transmitting Antenna Path-loss goes on Increasing Similarly Frequency Increases Path-loss Goes on increasing.