Title: Ray Tracing Code for Rural Areas with Material Interferences, Weather, and Foliage Losses

Note:

The code provided is a ray tracing simulation specifically designed for rural areas. It incorporates various factors such as material interferences, weather conditions, and foliage losses to accurately model the propagation of signals in such environments. The code allows for the measurement of received signal strength at different distances for up to 100 users, and it can be easily extended to support the generation of random users exceeding 1000.

To utilize the code, you will need to follow these steps:

Ensure you have the "alpha.m" file, which contains the necessary code for generating random users based on specific latitude and longitude coordinates. Modify the latitude and longitude values in the code to generate users in the desired location.

Run the main ray tracing code. This will initiate the simulation and calculate the received signal strength at various distances for each user. The code takes into account material interferences, weather conditions, and foliage losses to provide accurate results.

The code will generate output data for the received signal strength at different distances for each user. You can use this data to analyze the signal propagation characteristics in the rural area.

Customize the code as per your requirements. You can modify the simulation parameters, incorporate additional interference factors, or extend the code to support more advanced analyses.

Please note that the code serves as a starting point and may require further customization to suit your specific needs. It is recommended to carefully review the code and understand the underlying algorithms before making any modifications.

Remember to adhere to relevant licensing and usage agreements when utilizing the code, and acknowledge the original authors if necessary.

Best of luck with your rural area signal propagation analysis using ray tracing!

Regards Shujaa