Work Plan and Methodology

The proposed study will begin with study of radiation patterns of various antennas like rod, whip and dipole with specific stress on the radiation pattern at the ends of wire/rod. For tactical communication, it will also entail precise measurement of power transmitted in “null” direction at different distances from the antennas end. It will then establish a pattern and correlation between the power in the main lobe and “null” at a given distance. The phase characteristics study is also essential in design of such antennas. A mathematical expression for analysis will be arrived at and will be analyzed for various variables. Simulation results for mathematical model will be obtained for optimum values of null blocking efficiency. The effect of reflections using various methods is also taken into account. The use of various type of material and their effect will also be taken into account. Various design procedures and electromagnetic field strength variation pattern are included to arrive at optimum design. Figure 1 given below gives a block diagram of the overall methodology to be followed.

![Figure 1: Methodology Of Proposed Work](Image)

STUDY OF RADIATION PATTERN OF HF ANTENNAS → MATHEMATICAL MODEL → SIMULATION → PROPOSED MODEL FOR NULL BLOCKING

IONOSPHERIC DATA → OPTIMIZATION → FIELD TRIALS → RESULTS