

PARTIAL REFLECTION DRIFT EXPERIMENT TO STUDY THE D- REGION OF IONOSPHERE

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Abstract

The D-region of the ionosphere is remotely probed by ground-based radar. The method used is referred to as the partial reflection-drift experiment. The partial-reflection experiment is used to determine the horizontal-drift velocity of ionized irregularities in the ionosphere. If a point radio source is used, the stratified irregularities produce a diffraction pattern over the ground. By sensing this diffraction pattern with a minimum of three antennas the horizontal-drift velocity can be computed. To determine the horizontal-drift velocity of the ionosphere it is necessary to illuminate the ionosphere with a single radio-wave point source. When this is done a diffraction pattern is formed from the ionosphere irregularities in the D-region.