

STUDIES ON TROPOSPHERIC MICROWAVE PROPAGATION

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by

RADHAPATI LAL DAS

DEPARTMENT OF ELECTRICAL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY, DELHI
NEW DELHI - 110016

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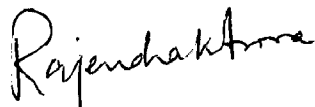
IN LOVING MEMORY OF
MY LATE MOTHER

C E R T I F I C A T E

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Rajendra K. Arora
Supervisor
Professor and Head, Department of Elec Engg,
Indian Institute of Technology, Delhi.

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Radhapati Lal Das.
- Radhapati Lal Das

ABSTRACT

Studies on tropospheric microwave propagation based on the Delhi-Pilani link path profile have been carried out along with the evaluation of link parameters to identify the terrain features, obstacles and sites for installation of the tropospheric communication link. Possible causes for polarization twist, a peculiarity observed over the link, have been discussed. The predicted performance of troposcatter transmission is investigated in terms of link parameters, meteorological parameters and climatic conditions by studying and comparing various methods of path loss prediction. Link reliability has been computed by combining long-term and short-term fading characteristics on the basis of climatic conditions and standard deviation curves. Space, space-angle and angle diversity studies are carried out experimentally as well as theoretically to improve system reliability. Troposcatter data, obtained by using PDP-11 computer system have been analysed for short-term fading characteristics like fade depth, fade rate, median level, correlation functions and cumulative distribution. A study of the spectral amplitude distribution of the fading signal has also been carried out.

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