

High-Frequency Electrical Conductivity of Soils: Effects of Contamination and Reclamation at 10 GHz

Nima P. Golhar

Associate Professor, Physics Department,
Nanasaheb Y. N. Chavan College, Chalisgaon, Jalgaon, Maharashtra
nima.golhar@rediffmail.com

Abstract: *This paper presents a comparative analysis of the electrical conductivity of contaminated and reclaimed soil samples at a high radio frequency of 10 GHz. The purpose of this study is to evaluate how soil contamination and subsequent reclamation affect the soil's ability to conduct electrical signals in the gigahertz frequency band. Conductivity measurements were obtained for five distinct soil samples across varying moisture content levels ranging from 0% to 30%. The results indicate a significant difference in conductivity values between contaminated and reclaimed soils, particularly at higher moisture content.*

Keywords: Soil conductivity, 10 GHz, contaminated soil, reclaimed soil, moisture content, electromagnetic properties

