

Abstract

Assessment of Pavement Structural Conditions Using a Ground-Penetrating Radar [†]

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Ground-penetrating radar (GPR) technology has been widely applied in ground subsurface investigations. Since 1980s, GPR technology has become a well-established technique for pavement performance evaluation. The analysis of GPR data provides rich information on the layer depths of pavement structures, material conditions, moisture content, voids, and locations of reinforcement and other features. The capability to accurately and reliably assess the subsurface conditions of pavement structure is essential to investigate both functional and structural deficiencies of pavements and their associated causalities resulting in the most cost-effective maintenance and rehabilitation treatments. The overall goal of this study is to extend GPR technology in combination with modern data analytics to provide improved pavement investigation methodology. In this study, an analytical approach to estimate field subgrade density is presented, which is critical for the diagnosis of pavement foundation failure [1,2].



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