

Pavement Section Classification By Using Fuzzy Rule-Based System

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A B S T R A C T

Section classification is one of the primary challenges in any successful pavement management system. Sections are normally classified based on their pavement condition index in order to separate them as good, moderate and poor. Conventionally, this has been done by comparing various pavement distress data against threshold values. However, borderline values between two categories have significant influence on the subsequent pavement maintenance and rehabilitation decision. In this paper, section data classifications are conducted using a fuzzy inference system for multiple distress input data such as cracking, patching, bleeding and ravelling to develop a membership function for each defect. A fuzzy rule based system was then used to develop a pavement condition index (PCI) for classification. The result showed that fuzzy pavement classification system is a better way to realistically differentiate between pavement sections, which would aid to have economical maintenance and rehabilitation decision.