Cross validation of multi input deterioration prediction model (MID-PM) for network level pavement management

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A B S T R A C T

The development of an accurate deterioration prediction model for pavements is vital for effective pavement management in order to create a timely and accurate treatment intervention programme and thus reduce maintenance costs. A novel network level deterministic pavement deterioration model for flexible pavements, named Multi Input Deterioration Prediction Model (MID-PM), has been developed by evaluating the changes in pavement condition index (PCI). The proposed model utilises multiple input data such as distress (area and length of cracks), pavement age, traffic loading, maintenance effects, climatic effects and construction and material properties deposited in the Long-term Pavement Performance Database (LTTP) of the USA. This paper presents a validation study of the MIDPM model by comparing the results against other pavement deterioration models that have been developed in the past. In addition, the paper describes the process involved in the development of the model. The results show that the accuracy of empirical models for arterial roads is better than for collector roads in all climatic zones.