

## **Crack progression models for flexible pavements**

### **Abstract**

The deterioration of paved roads is defined by the damage trend of its surface condition over time. The defects of a pavement surface, which is usually quantified through a pavement condition survey, are classified under three major models of distress, namely; cracking, disintegration, and permanent deformation. The main focus of this paper is on the crack damages because cracking often triggers the application of maintenance treatments and cracking can be the decisive factor in determining the most appropriate rehabilitation option among others.

Cracking is perhaps one the most important distresses in bituminous pavements. The development of cracking is considered directly in most mechanistic design procedures and indirectly in most empirical design procedures. A primary bituminous pavement design objective is to minimize cracking. Cracking is a distress that is readily identifiable and universally acknowledged as a sign of pavement deterioration. However, the modeling of cracking is quite complex. There are many factors that can affect the development of cracks, and once present, the proliferation of cracking may be affected by the same factors, probably the different factor with the other, or a combination of both.