

## Relation between Pavement Roughness and Distress Parameters for Highways

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**Abstract :** Road surface roughness is one of the essential aspects of the road's functional condition, indicating riding comfort in both the transverse and longitudinal directions. The government of India has made maintaining good surface evenness a prerequisite for all highway projects. Pavement distress data was collected with a Network Survey Vehicle (NSV) on a National Highway. It determines the smoothness and frictional qualities of the pavement surface, which are related to driving safety and ease. Based on the data obtained in the field, a regression equation was created with the IRI value and the visual distresses. The suggested system can use wireless acceleration sensors and GPS to gather vehicle status and location data, as well as calculate the international roughness index (IRI). Potholes, raveling, rut depth, cracked area, and repair work are all affected by pavement roughness, according to the current study. The study was carried out in one location. Data collected through using Bump integrator was used for the validation. The bump integrator (BI) obtained using deflection from the network survey vehicle was correlated with the distress parameter to establish an equation.

**Keywords :** roughness index, network survey vehicle, regression, correlation

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