

## Pavement Roughness Prediction Systems: A Bump Integrator Approach

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**Abstract :** Pavement surface unevenness plays a pivotal role on roughness index of road which affects on riding comfort ability. Comfort ability refers to the degree of protection offered to vehicle occupants from uneven elements in the road surface. So, it is preferable to have a lower roughness index value for a better riding quality of road users. Roughness is generally defined as an expression of irregularities in the pavement surface which can be measured using different equipment like MERLIN, Bump integrator, Profilometer etc. Among them Bump Integrator is quite simple and less time consuming in case of long road sections. A case study is conducted on low volume roads in West District in Tripura to determine roughness index (RI) using Bump Integrator at the standard speed of 32 km/h. But it becomes too tough to maintain the requisite standard speed throughout the road section. The speed of Bump Integrator (BI) has to lower or higher in some distinctive situations. So, it becomes necessary to convert these roughness index values of other speeds to the standard speed of 32 km/h. This paper highlights on that roughness index conversional model. Using SPSS (Statistical Package of Social Sciences) software a generalized equation is derived among the RI value at standard speed of 32 km/h and RI value at other speed conditions.

**Keywords :** bump integrator, pavement distresses, roughness index, SPSS

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