

A Concept for Design of Road Super-Elevation Based on Horizontal Radius, Vertical Gradient and Accident Rate

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Abstract : Growth of traffic brings various negative effects, such as road accidents. To avoid such problems, a model is developed for the purpose of highway safety. In such areas, fuzzy logic is the most well-known simulation in the larger field. A model is accomplished for hilly and steep terrain based on Fuzzy Inference System (FIS), for which output is super elevation and input data is horizontal radius, vertical gradient, accident rate (AR). This result shows that the system can be efficaciously applied as for highway safety tool distinguishing hazards components correlated to the characteristics of the highway and has a great influence to the making of decision for accident precaution in transportation models. From this model, a positive relationship between geometric elements, accident rate, and super elevation is also identified.

Keywords : accident rate, fuzzy inference system, fuzzy logic, gradient, radius, super elevation

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