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Investigation of the factors influencing wavelet-based macrotexture values

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Abstract: The primary objective of this work is to identify influential factors on asphalt pavement texture properties and to estimate their relative importance. The analysis is descriptive as well as analytical. Non-parametric procedures and multiple regression techniques were used to identify the significant categorical and quantitative predictors, respectively. The analysis showed that all categorical variables (location, design method, aggregate type, and asphalt binder grade) have statistically significant effect on macrotexture values. The regression analysis and model selection using stepwise regression also showed that air void, nominal maximum aggregate size and percent of trucks or truck traffic count are significant predictors on macrotexture values. Conventional and wavelet-based macrotexture values were statistically analysed in this study.