

Jordan University of Science and Technology

Pavement monitoring: a comparison of smartphone and accelerometer sensors

Authors: A Shtayat, S Moridpour, B Best

Abstract: The increase in vehicular traffic volume on our roads intensifies the need for comfortable and safe riding . To satisfy the comfortable and safe riding needs, frequent inspections of pavement health statutes is needed. Sustainable pavement condition comes from accurate monitoring, accurate assessment, and routine maintenance actions. Monitoring the pavement condition is a technique used to obtain precise details about the level of damages, roughness, and smoothness of the road surface. A regular monitoring system can help transport agencies and governments determine the current and future pavement conditions. This study uses two monitoring devices, including a smartphone application and an accelerometer sensor, to collect pavement vibration data for a local road. In addition, a comparison between the devices is presented in terms of accuracy, efficiency, and best locations to be mounted. The results show that both methods provide accurate monitoring results with some considerations on the best mount locations.