Proceedings of the International Conference on Industrial Engineering, Systems Engineering and Engineering Management (ISEM), Lord Charles Hotel, Somerset West, South Africa, 2-4 October 2023

Research proposal for the development of an integrated solution for wheel misalignment detection in the road transport industry in South Africa

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Abstract
One of the key contributing factors leading to road crashes in South Africa is associated with vehicle instability caused by wheel misalignment. Research conducted over the past 10 years shows that most vehicle accidents occur due to vehicle instability caused by wheel misalignment. Motorists currently check wheel alignment during periodic car service, which is a reactive approach posing a risk of motorists causing accidents on the road, which could result in loss of human life. However, wheel alignment requires real time monitoring and detection which should help to relay information on the degree of misalignment to make appropriate decisions. The solution from the integrated wheel misalignment detection system should provide information for decision making on the worst-case scenario where the misalignment is potentially dangerous to human life. This paper presents a desktop literature study that gives an overview of the current problem under investigation in the road transport industry. A gap analysis was conducted to identify further research questions associated with wheel misalignment detection in the road transport industry.