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Intelligent air-cushion tracked vehicle performance investigation: Neural-networks (Article)

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Abstract

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Intelligent Air-Cushion Tracked Vehicle (IACTV) is intended as an alternative to conventional off-road vehicles, which are driven by track system and air-cushion system. To make IACTV as effi cient as possible, proper investigation of vehicle performance is essential. However, most relevant factors that affect the competitive effi ciency of the air-cushion tracked vehicle are the tractive effort, motion resistance and power consumption. Therefore, an Artifi cial Neural-Network (ANN) model is proposed to investigate the vehicle performance. Cushion Clearance Height (CH), and Air-Cushion Pressure (CP) are used at the input layers while Power Consumption (PC), Tractive Effort (TE) and Motion Resistance (MR) are used at the output layers. Experiments are carried out in the fi eld to investigate the vehicle performance and compared with the results obtained from ANN. Copyright © 2012 Inderscience Enterprises Ltd.

SciVal Topic Prominence

Topic: Tracked vehicles | Vehicles | Wheels

Prominence percentile: 57.885

Author keywords

ANN | Artifi cial neural network | CH | Cushion clearance height | Motion resistance | MR | PC | Power consumption | TE | Tractive effort

Indexed keywords

Engineering uncontrolled terms: ANN | CH | Cushion clearance height | Motion resistance | MR | Tractive effort

Engineering controlled terms: Electric power utilization | Off road vehicles | Personal computers | Tellurium | Tracked vehicles | Vehicle performance

Engineering main heading: Neural networks

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