Journal of Mechanics
Volume 26, Issue 3, September 2010, Pages 317-325

ISSN: 17277191
Document Type: Article
Source Type: Journal

View references (16)

View at publisher |

The effect of kinematic oscillations on harmonic wheel flange wear of rail vehicles

Rezvani, M.A., Lari, A.A.
School of Railway Engineering, Iran University of Science and Technology, Narmak, Tehran, 16846-13114, Iran

Abstract

A number of factors affect rail vehicle steel wheels. Kinematic oscillations uncovered by Klingel, is amongst the parameters affecting dynamic behaviour of the wheelset. Normal and tangential forces are also included within the wheel/rail interface. Geometry and material properties of the contacting bodies are within these parameters. Altogether, these inputs to the rail/wheel system can result in plastic deformation and wear. The authors of this paper make their attempts to introduce a noble study including a harmonic wear pattern in circumference of the flange region when contacting the rail gauge corner. Theoretical aspects of this harmonic pattern are then developed and presented.

Language of original document

English

Author keywords

Rail/wheel interaction; Steel wheel; Vehicle dynamics; Wear

Index Keywords

Dynamic behaviours; Gauge corner; Material property; Rail vehicles; Rail/wheel; Steel wheel; Steel wheels; Tangential force; Theoretical aspects; Vehicle dynamics; Wear; Wear pattern; Wheel flanges; Wheel/rail; Wheelsets
Engineering controlled terms: Flanges; Harmonic analysis; Kinematics; Rail motor cars; Vehicles
Engineering main heading: Vehicle wheels

References (16) View in table layout