

عنوان مقاله:

Evaluating the Effect of Dissipated Viscous Energy of a Rolling Tire on Stress, Strain and Deformation Fields Using an Efficient 2D FE Analysis

محل انتشار:

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خلاصه مقاله:

The dissipated energy from periodic deformation is regarded as the main reason for heat generation and temperature rise inside the tire domain. However, the mechanical behavior of rubber parts is highly temperature dependent. In most performed investigations, the influence of thermal effects on stress/ deformation fields of pneumatic tires is ignored and just temperature distribution is considered. Hence in this study, using a series of 2D and 3D finite element models, a robust and efficient numerical study is presented for thermo-mechanical analysis of pneumatic tires specially 115/60R13 radial tire. Finally, the effects of loading conditions and ambient temperature on the thermo-mechanical properties of tire are investigated in detail. Comparing the obtained results with the available results in literature, shows a good agreement of the presented studies with related published works.

کلمات کلیدی:

.Pneumatic tire, Thermal analysis, FEM analysis, Stress -deformation field

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