ABSTRACT

DESIGN AND STRUCTURL ANALYSIS OF NON PNEUMATIC TYRES IN AIRCRAFT

For more than 100 years, vehicles have been rolling along on cushions of air encased in rubber. Sometimes, we get so used to a certain product that no true changes are ever really made for years, decades even. So begins an article discussing the development of airless tyres, something that has become more prevalent in the past few years..

A few tyre companies have started experimenting with designs for non-pneumatic tyres including Michelin and Bridgestone. Creating a new non-pneumatic design for tyres has more positive implications than one might think. For one thing, there are huge safety benefits. Having an airless tyre means there is no possibility of a blowout, which, in turn, means the number of accidents will but cut significantly. Even for situations such as Humvees in the military, utilizing non-pneumatic tyres has a great positive impact on safety. Tyres are the weak point in military vehicles and are often targeted with explosives



Problem definition

Design of airless tyres for different load conditions and compression with different structure like circular, square and honeycomb and analysis of problem with analytical and fem approach

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