

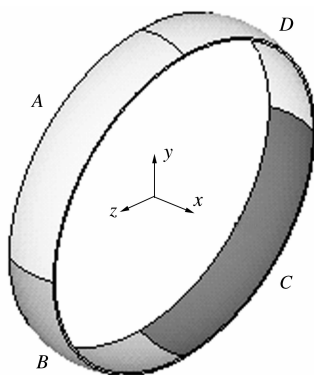


图 7 带束层整体或局部密度变化对轮胎均匀性的影响和侧向力波动指标。这些结论对子午线轮胎的制造,尤其对寻找影响子午线轮胎均匀性的制造因素有指导意义,人们可以从得到的子午线轮胎均匀性指标数据及其特点去追溯不均匀性的起源。

参考文献:

[1] 庄继德. 现代汽车轮胎技术[M]. 北京:北京理工大学出版社,2001. 51-56.

- [2] 山井雄健. 日本大津轮胎公司提出载重子午线轮胎综合轮胎技术理论 I [J]. 刘蕴琰译. 轮胎工业,1990,10(2):29-31.
- [3] 美国固特异轮胎橡胶公司. 防止端部脱层的轮胎带束层结构[J]. 蔡惠才译. 轮胎工业,1990,10(7):45-52.
- [4] Yeoh O H. Characterization of elastic properties of carbon-black filled rubber vulcanizates[J]. Rubber Chem. and Technol.,1990,63(5):792-805.
- [5] Danielson K T, Noor A K, Green J S. Computational strategies for tire modeling and analysis[J]. Computers & Structures,1996,61(44):673-693.
- [6] Danielson K T, Noor A K. Three-dimensional finite element analysis in cylindrical coordinates for nonlinear solid mechanics problems[J]. Finite Elements in Analysis and Design,1997,27:225-249.
- [7] James M, Green J R. Application of a total lagrangian corotational finite element to inflation of a tire[J]. Int. J. Solids Structures,1997,34(27):3 541-3 570.
- [8] 赵树高,杨学贵,邓 涛,等. 子午线轮胎接地问题的三维非线性有限元分析研究[J]. 轮胎工业,2001,21(11):662-669.
- [9] 李丽娟,刘 锋. 子午线轮胎接触变形的非线性有限元分析[J]. 合成橡胶工业,2000,23(5):313-316.

第二届全国橡胶工业用织物和骨架材料技术研讨会论文

Analysis for effect of belt on radial tire uniformity by FEA

WANG Xiao-ming, YANG Mei-sheng

(Haerbin University of Technology, Haerbin 150001, China)

Abstract: A three-dimensional FEA model has been built based on the practical structure of 9.00R20 tire by using layered elements, solid elements and contact elements, with ANSYS software. The model is used to analyze the effect of the gage, lateral deviation and local density in belt on the radial force variation (RFV) and lateral force variation (LFV). The results indicate that under certain inflation pressure and deflection, RFV of tire increases monotonously with the belt gage, LFV of tire increases monotonously and directionally with the lateral deviation of belt; and the change of local density in belt has little effect on both RFV and LFV.

Keywords: radial tire; structure design; FEA; belt

益阳橡机 GK250E 型密炼机出口欧盟

中图分类号: TQ330.4+3 文献标识码: D

2003 年 11 月 5 日, 益阳橡胶塑料机械集团有限公司与意大利莱茵公司正式签订了一台 GK250E 型密炼机的出口合同, 此举标志着该公

司的产品获得了出口欧盟的通行证。

该密炼机采用德国 GK 型密炼机技术, 主要用于树脂、塑料和硬橡胶制品及短纤维、CR 的混炼和终炼。

(益阳橡胶塑料机械集团有限公司 李四海供稿)