表10　刚度仿真分析结果

项　目	成山①	成山②	成山③
胎冠刚度/(kN·m^{-1})	1 712	1 506	1 672
胎侧刚度/(kN·m^{-1})	653	720	666
径向总刚度/(kN·m^{-1})	487	476	476
横向刚度/(kN·m^{-1})	200	195	188
纵向刚度/(kN·m^{-1})	425	439	418
扭转刚度/[(N·m)·(°)$^{-1}$]	42 215	42 534	42 667

差,影响舒适性。

(2)胎侧刚度较小时,延缓转向时力的传导,易产生粘滞感,响应慢;扭转刚度较大时,可提升方向盘在转向时的力感,有利于提升应答性。

(3)在转向力感模糊时,减小花纹边部加强筋的平均压力或提高从外向内花纹加强筋平均压力的梯度感,有助于提高力的线性建立,提高手感应性;但是花纹边部加强筋平均压力减小过多也会带来不利因素,对操纵稳定性的影响是大转向时,后期增益明显,比预期变快,影响操纵稳定性;对轮胎质量的影响是易产生肩部偏磨。

驾乘的主观评价比较复杂,目前完全用可量化的数据来比较还有很多困难,需要在今后继续积累相关经验,不断进行完善。

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Analysis of Influencing Factors on Subjective Evaluation Performance of All-steel Radial Tire

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Abstract: The factors affecting the subjective evaluation of the driving and riding performance of all-steel radial tire were studied. The results showed that, when the sidewall stiffness was large, the impact filtering on the ground was poor, which affected comfort. When the sidewall stiffness was small, the force transmission when the steering was delayed, which was prone to sticky feeling and the response was slow. When the torsional stiffness was large, it could improve the sense of force when the steering was turning, which was beneficial to improve responsiveness. Reducing the average pressure of the ribs on the pattern side or increasing the sense of gradient would help to establish the linearity of the force and improve the hand sensitivity.

Key words: all-steel radial tire; lightweight; subjective evaluation; ride comfort; handling stability; stiffness; pressure distribution

一种胎侧破碎机构和胎侧破碎方法

由东莞市秉能橡胶有限公司申请的专利(公布号　CN 111438852A,公布日期　2020-07-24)“一种胎侧破碎机构和胎侧破碎方法”,公开了一种胎侧破碎机构和胎侧破碎方法,用于提高胎侧的破碎效率。本发明胎侧破碎机构包括机架、轮胎破碎区域和至少两把第一水刀。第一水刀设置在机架上,不同的第一水刀间隔设置。第一水刀位于轮胎破碎区域的第一侧,轮胎破碎区域用于容置待破碎的轮胎,这样能使得第一水刀靠近位于轮胎破碎区域的轮胎的胎侧,方便对胎侧的破碎。第一水刀用于通过喷水口向转动的轮胎的第一目标胎侧区域喷射水流,以破碎第一胎侧。因第一目标胎侧区域为沿纵向对第一胎侧划分得到的胎侧区域,不同的第一水刀用于破碎不同的第一目标胎侧区域,多把第一水刀可以配合破碎第一胎侧的不同部分,提高了胎侧的破碎效率。

(本刊编辑部　马　晓)