

3 结语

针对目前轮胎滑水广泛采用的有限元模型研究现状,讨论了采用CFD方法对胎面花纹沟内流体的流动特性进行深入分析的必要性。通过建立胎面花纹的CFD模型,对胎面花纹沟内的流场情况进行了进一步的分析,结果表明采用气液两相流分析花纹沟内流体的流动是可行的。采用有限元模型和CFD模型相结合的轮胎滑水研究路线切实可行,可以从宏观和微观上进行综合分析。

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收稿日期: 2013-01-23

Simulation on Tire Hydroplaning Based on CFD

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Abstract: The finite element model(FEM) and the computational fluid dynamics(CFD) model of 205/50R16 radial tire with longitudinal tread groove pattern were developed. The process of hydroplaning was simulated by fluid-solid coupled FEM, and the fluid flow field in tire contact region was obtained by using CFD model with RNG(renormalization group) and VOF(volume of fluid) methods. The comparison results of two models showed that the CFD model could be used to effectively analyze the fluid flow characteristics in micro grooves, and as the thickness of water film increased, the fluid pressure increased, which would most likely cause dynamic hydroplaning.

Key words: tire; hydroplaning; computational fluid dynamics; finite element analysis

燕山石化产出溶聚丁苯橡胶新品

中图分类号: TQ333.1 文献标志码: D

日前, 中国石化北京燕山分公司橡胶一厂丁苯橡胶装置顺利产出合格溶聚丁苯橡胶(SSBR)新产品——SSBR2506, 产品各项指标均达到要求。

SSBR2506属于高端SSBR产品, 主要适用于高档轮胎胎面胶。由于其生产过程为低温引发、低温聚合, 能耗及综合成本较低, 硫化胶具有较高的抗湿滑性及低滚动阻力, 因此综合加工性

能优良, 完全可以替代进口产品, 同时价格低于进口产品, 性价比较高, 市场前景看好。

2011年8月, 欧盟出台了轮胎标签法, 要求自2012年11月1日起在欧盟销售的轿车轮胎、轻型载重轮胎、载重轮胎及公共汽车轮胎, 必须标示轮胎的燃油效率、滚动噪声和湿抓着力等级, 不达等级标准的产品不得进入市场。燕山石化SSBR新品成功投产, 为国内轮胎橡胶材料的升级换代提供了保障。

(摘自《中国化工报》, 2013-05-14)