

- tyre with the road surface. In: Malcoin J Crocker. Proc. of Purdue Noise Control Conference. Indian: Purdue University, 1971. 59 ~ 64
- 3 Jennewein M. Investigations concerning tyre/road noise sources and possibility of noise reduction. I. Mech. E., 1984, C150/84:235 ~ 245
- 4 Schaaf K, Ronneberger D. Noise radiation from rolling tires—sound amplification by the ‘Horn Effect’. Inter-Noise, 1982 (5). 131 ~ 134
- 5 赵松龄. 噪声的降低与隔离(下册). 上海: 同济大学出版社, 1985. 55
- 6 Nilsson N A, Soederquist S, Bennerhult O. Air resonant radiation, a possible mechanism of high frequency noise from cross-bar tires. IFM Akustikbyran Technical Report, 1979, 6. 084. 02
- 7 Sakata T, Horimura H, Ide H. Effects of tire cavity resonance on vehicle road noise. Tire Science and Technology, TSTCA, 1990, 18(2): 68 ~ 79
- 8 Thompson J K. Plane wave resonance in the air cavity as a vehicle interior noise source. Tire Science and Technology, TSTCA, 1995, 23(1): 2 ~ 10
- 9 诺顿 M P. 工程噪声和振动分析基础. 盛元生, 顾伟豪, 韩建民, 等译. 北京: 航空工业出版社, 1993. 113 ~ 115
- 10 Vinesse E, Nicolle H. Surface waves on the rotating tyre: an application of functional analysis. Journal of Sound and Vibration, 1988, 126(1): 85 ~ 96
- 11 Kropp W. Structure-borne sound on a smooth tyre. Applied Acoustics, 1989, 26: 181 ~ 192
- 12 Nakajima Y, Inoue Y, Ogawa H. Application of the boundary element method and modal analysis to tire acoustics problems. Tire Science and Technology, TSTCA, 1992, 21(2): 66 ~ 90
- 13 Lee J J, Ni A E. Structure-borne tire noise statistical energy analysis model. Tire Science and Technology, TSTCA, 1997, 25(3): 177 ~ 186

第十届全国轮胎技术研讨会论文

Tire Noise-generating Mechanism at Constant Speed

Guan Yuanhong

(Shanghai Jiaotong University 200030)

Dong Qin

[Shanghai Tire and Rubber (Group) Co., Ltd. 200072]

Abstract The qualitative and partly quantitative conclusions of tire noise-generating mechanisms are drawn from the previous studies. It is pointed out that there are 3 types of tire noise-generating mechanisms at constant speed, i. e. airflow noise, mechanical noise and filter amplification mechanisms. The noise-generating mechanisms of some typical tread patterns are analysed for example. The developing trend of the model establishment and prediction for tire noise are briefly discussed.

Keywords tire noise, noise-generation mechanism, airflow noise, mechanical noise, structure noise

辽轮集团公司全钢载重子午线轮胎二期工程生产出第1条非考核轮胎

1998年12月19日, 辽宁轮胎集团有限责任公司年产20万套全钢载重子午线轮胎二期工程生产出第1条非考核轮胎——11R22.5无内胎子午线轮胎。这标志着辽轮集团公司全钢载重子午线轮胎二期工程主体设备安装工作已圆满结束, 并进入调试阶段, 比合同计划提前了1年。

辽轮集团公司20万套全钢载重子午线轮胎工程是辽宁省“八五”期间的重点技改项目之一, 也是原化工部十大技改项目之一。工程总

投资4.8亿元, 将以生产无内胎全钢载重子午线轮胎为主, 技术含量高, 市场前景广阔。二期工程投产后将形成年产35万套全钢载重子午线轮胎的生产能力。

辽宁省委、省政府也非常关心工程的进展情况。在设备安装期间, 省委书记闻世震、省长张国光、省委副书记孙春兰、常务副省长郭廷标和副省长陈政高等领导先后到辽轮进行了现场调研和视察, 并指示辽轮一定要早日达标投产, 抢占市场。

(辽宁轮胎集团有限责任公司
秦首先供稿)