



山岭区低等级低指标公路路线的使用质量分析

Analysis of Operating Quality on Low Class Highlands Highway with Design Elements of Minimum Standard

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英文关键词: [lower class road](#) [road design](#) [highway alignment](#) [reverse loop](#) [operating speed](#) [driving task](#) [riding comfort](#)

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中文摘要

在计算机上建立道路生成模块、车辆模型库、驾驶人模块,形成“路线-驾驶员-车辆”仿真系统,以云南省大关-永善四级公路为对象,以小客车为仿真车辆,针对常见的驾驶员类型来设置驾驶特征参数,进行了跟随路中线行驶的仿真试验,分别分析了路线上的速度特性、操纵负荷特性和驾乘舒适性。试验结果表明:只要注意相邻曲线参数的合理搭配并注意控制直线段长度,同样可以设计出速度均衡的低等级路线;回头曲线的使用和回旋线的省略会使方向盘峰值转速和侧向加速度增长率急剧增加,造成驾驶员操纵紧张以及乘坐不舒适;曲线型设计方法会明显改善山区低等级公路的使用质量,应多尝试使用。

英文摘要

3D road module, vehicle models database, and driver module were built in computer, and integrated into roadway - driver-vehicle simulation system. A fourth class road in YunNan province in China was selected as analyzed course in our driving simulation, as well as a passenger car model, and a desired course of road center line, definition of driving behavior parameters considered over 70 percent driver in real word. Speed performance, complexity of the driving task, and comfort of driving and riding were respectively analyzed in this paper. The results show that, if consistency of design standard along road length was ensured, especially paying attention to control of straight sections length, lower class road with equilibrium speed also can be provided to road users; reverse loop and absent of spirals in lower class road would cause a high increases in peak value of steering wheel rev and change rate of lateral acceleration, which could lead drivers very flurry and riding uncomfortable; curve-based method should be attempt in alignment design more frequently, which seems to be the best solution to highway safety problems.

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