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工程与应用

高速公路合流区车间无线通讯安全辅助驾驶研究

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摘要 针对高速公路入口匝道合流处易发生交通事故，而传统汽车安全辅助驾驶系统在这类区域无法实际应用等问题，提出了利用车间无线网络通讯、GPS与电子地图匹配等技术协同来解决这些问题。并采用基于前后车辆间跟驰模型的加速度风险评价标准作为安全评价，构建系统并在校园内进行了简单的道路实验。实验证明提出的方法可有效地解决传统汽车安全辅助驾驶系统中各类传感器失效而造成的问题，并可应用于极端的气候条件、特殊的路况包括交叉路口等复杂道路下的安全辅助驾驶等各类系统。

关键词 辅助驾驶 合流区域 无线网络 全球定位系统 安全评价
分类号

Research on safety driving assistant system of expressway on-ramp merging area based on vehicle to vehicle wireless communication

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Abstract
On-ramp merging area of expressway is general accident-prone section.But，traditional vehicle safety driving assistant system can not solve this traffic problem.According to this，this paper proposed a new method by using V2V wireless network communication，GPS and digital map etc.Also，the acceleration risk criterion of car-following model between the preceding car and the host car is adopted as safety evaluation.Simple road experiments are performed based on above and the results show that the new method can solve the problems caused by usual sensors such as lidar，vision and radar.The new method can be used for safety driving assistant system under special conditions such as cross road，extreme weather condition and rural road.

Key words driving assistant on-ramp wireless network Global Positioning System（GPS） safety evaluation

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