

高速汽车弯道前方碰撞报警算法

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摘要 根据稳态预测动态校正假说, 提出了横向与纵向加速度综合预测算法并用于预测行驶中的汽车在将来时刻的位置。同时, 提出了用虚拟道路拟合算法模拟汽车前方道路边界, 用障碍物射线检测算法对汽车前方障碍物的相对位置进行判别。建立了仅以雷达为前方道路交通环境传感器的高速汽车弯道前方碰撞报警算法。仿真结果表明, 所建立的算法能够在弯道情况下正常给出警报信息, 起到预警的功能。

关键词 [车辆工程](#) [弯道](#) [前方碰撞报警](#) [雷达](#)

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Front collision warning algorithm for curved highway

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Abstract According to the hypothesis of driver steady preview and transient correction, an algorithm for the lateral and longitudinal acceleration preview was brought forward to predict the vehicle position in the near future. Meanwhile an algorithm for the virtual road regression was suggested to simulate the road boundary in the front. The relative positions of the barrier before the vehicle were discriminated by the so called barrier radial cheek algorithm. A front collision warning algorithm for the curved highway was established depending only upon the radar as the sensor for the front road circumstances. The simulation results show that the suggested algorithms can give out the warning information in advance on the curved highway under dangerous conditions.

Key words [vehicle engineering](#) [curved road](#) [front collision warning](#) [radar](#)

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