



## 论文摘要

中南大学学报(自然科学版)

ZHONGNAN DAXUE XUEBAO(ZIRAN KEXUE BAN)

Vol.41 No.4 Aug.2010

[PDF全文下载] [全文在线阅读]

文章编号: 1672-7207(2010)04-1462-05

### 非高斯噪声下的车载GPS信号定位算法

陈宇波, 宋迎春

(中南大学 信息物理工程学院, 湖南 长沙, 410083)

**摘要:** 针对车载GPS定位算法中卡尔曼滤波对异常的观测噪声非常敏感, 严重影响车载GPS定位的精度问题, 应用Bayes定理, 给出观测噪声服从污染正态分布的Bayes滤波算法。研究表明: 该滤波算法能够有效地抑制异常噪声对车载GPS定位算法的影响; 实例解算结果验证了该算法的有效性和可靠性。

**关键字:** 卡尔曼滤波; 非高斯噪声; Bayes估计; 车载GPS定位

### A Bayes filter algorithm with non-Gaussian noises based on location of vehicular GPS

CHEN Yu-bo, SONG Ying-chun

(School of Info-Physics and Geomatics Engineering, Central South University, Changsha 410083, China)

**Abstract:** Based on the fact that the precision of location of vehicular GPS is significantly affected by the gross errors since Kalman filtering is very sensitive to them, a robust Bayesian estimator for the state parameters of one kind of dynamic models was given based on Bayesian theory with non-Gaussian noises. The results show that this Bayes filter algorithm can resist efficiently affection of abnormal noises. Example proves that the modified Kalman filter is effective and reliable.

**Key words:** Kalman filtering; non-Gaussian noises; Bayes estimation; location of vehicular GPS

## 有色金属在线

## 中国有色金属权威知识平台

地 址：湖南省长沙市中南大学 邮编： 410083  
电 话： 0731-88879765 传真： 0731-88877727  
电子邮箱： zngdxb@mail.csu.edu.cn 湘ICP备09001153号