

技术方法

基于DEM的遥感数据复原方法研究

胡文英, 角媛梅

1.昆明理工大学环境科学与工程学院, 昆明650093; 2.云南师范大学旅游与地理科学学院, 昆明650092

摘要:

介绍了一种基于数字高程模型(DEM)的遥感数据复原新方法。此方法将地形因子作为最主要的作用因子, 不考虑卫星传感过程中的随机影响。首先, 根据基础地理数据, 按其等高线层生成DEM; 然后, 利用DEM, 通过实测样点、DEM和经过纠正的遥感数据的信息融合, 进行遥感数据中像元样点的坡度、坡向分析, 建立DEM与遥感信息的相关关系模型, 以数学统计方法描述地形因子对遥感数据的作用机理; 最后, 进行逐像元的遥感信息复原(归一化)。结果表明, 该方法具有较好的信息复原效果, 可消除或减少地形对遥感数据的影响, 增强遥感技术在山区复杂地形下的实用性。

关键词: 数字高程模型(DEM) 遥感数据 复原方法

A METHOD FOR RECOVERY OF REMOTE SENSING DATA BASED ON THE DIGITAL ELEVATION MODEL

HU Wen-Ying, JIAO Yuan-Mei

1.School of Environmental Science and Engineering, Kunming Science and Technology University, Kunming 650093, China; 2.School of Tourism and Geography, Yunnan Normal University, Kunming 650092, China

Abstract:

This paper deals with a new method for remote sensing data recovery, which is based on the Digital Elevation Model (DEM). In this technique, ground topography acts as the key factor, and random effects of satellite remote sensing are ignored. First, a DEM is created according to the digital contour lines from the basic geographic data. Then, through combining the ground real data with DEM and corrected remote sensing data, the slope & aspect analysis of pixel in remote sensing data is performed, thus building up a model which shows the relationship between the DEM and the remote sensing data so as to characterize the action mechanism of the topography on the remote sensing data by mathematical statistics. Finally, the remote sensing information recovery is conducted for each pixel in remote sensing data. With this method, an excellent information recovery result has been achieved. The technique can also eliminate or reduce the influence of topography on remote sensing data. Therefore, it enhances the practical application of remote sensing techniques under the complex topographic conditions of mountain areas.

Keywords: Digital elevation model (DEM) Remote sensing data Recovery method

收稿日期 2006-04-24 修回日期 2006-11-28 网络版发布日期

DOI:

基金项目:

国家自然科学基金资助项目(40401022); 云南省自然科学基金项目(编号: 2004D0016Q); 云南省教育厅科学研究基金项目(06Y086A)。

通讯作者:

作者简介:

作者Email:

参考文献:

本刊中的类似文章

扩展功能

本文信息

- ▶ Supporting info
- ▶ PDF(355KB)
- ▶ [HTML全文]
- ▶ 参考文献[PDF]
- ▶ 参考文献

服务与反馈

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ 引用本文
- ▶ Email Alert
- ▶ 文章反馈
- ▶ 浏览反馈信息

本文关键词相关文章

- ▶ 数字高程模型(DEM)
- ▶ 遥感数据
- ▶ 复原方法

本文作者相关文章

- ▶ 胡文英
- ▶ 角媛梅

PubMed

- ▶ Article by Hu, W. Y.
- ▶ Article by Jiao, Y. M.

反馈人	<input type="text"/>	邮箱地址	<input type="text"/>
反馈标题	<input type="text"/>	验证码	<input type="text" value="1448"/>