

自动化

## 基于地理信息的电力线全景图像信息融合方法

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摘要

提出一种基于地理信息的电力线全景图像拼接方法。首先利用自动巡检机器人同步采集电力线的可见光图像和红外图像, 采用尺度不变特征变换(SIFT)特征匹配算法分别拼接成全景图。其中红外全景图用于电力线的故障检测, 可见光全景图对故障作进一步的可视化辅助检测, 实现了故障信息、GPS信息和全景图像的融合, 能够较精确地确定故障处的实际地理位置, 提高了对电力线的维修效率。

关键词

[尺度不变特征变换\(SIFT\); 电力线全景图; 红外图像; 信息融合; 电力线故障](#)

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## Application and Realization of Power Line Panorama Based on the Geographic Information

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Abstract

Based on geographic information, the authors propose an approach of information fusion for the panorama of power transmission lines. Firstly, the visible light images and infrared images of transmission line are synchronously collected by power transmission line patrol inspection robots, and by means of scale invariant feature transform (SIFT) feature matching algorithm these images are spliced together to form infra-red panorama and visible light panorama respectively. The infrared panorama is used for fault detection of transmission line; the visible light panorama is used for further visualized auxiliary detection of fault; thus the fusion of fault information and GPS information as well as panorama image information is realized, so the actual geographical position of the place where fault occurs can be determined more accurately and the maintenance efficiency of transmission lines can be improved.

Key words

[scale invariant feature transform \(SIFT\); power line panorama; infra-red image; information fusion; power line fault](#)

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