

All ▾

Q

ADVANCED SEARCH

Conferences > 2019 International Symposium ... ?

Landslide Detection Method using Laser Beam

Publisher: IEEE

Cite This

PDF

Florentinus Budi Setiawan ; Maria Wahyuni ; Suyanto Edward Antonius

All Authors

66

Full

Text Views



Abstract

Document Sections

I. Introduction

II. Landslide and Measurement

III. Method

IV. Result

V. Conclusion

Authors

Figures

References

Keywords

Metrics

Abstract:

Events of landslides in the tropics often occur, and the main causes of these events are often caused by the high intensity of rainfall. Before an avalanche occurs, it will usually be preceded by land movements that can occur slowly (creeping) or fast, depending on the condition of the type of soil that exists in that location. Some ground motion detectors include sliding stakes and inclinometers. This tool is useful as a measure of the amount of movement, especially on sloping land. The purpose of this study is to make a movement detection device that can be an alarm or early warning for residents who live in locations that are prone to movement. The benefit for science is the development of monitoring methods using laser light that have not been done so far. The results of this study will be useful for the development of methods for measuring land shifts. The signal is sent using an internet network, so that it can be monitored continuously. The significance of this research for science is the development of a method of applying sensors using laser light which has not been done so far. Recording is done by using a web-based data logger by sending visual measurement data to the data center. The accuracy of the laser beam that spreads when it is received on the target board, is done using the center cluster method.

Published in:

2019 International Symposium on Electrical and Electronics Engineering (ISEE)

Date of Conference:

10-12 October 2019

INSPEC Accession Number:

19240630

Date Added to IEEE Xplore:

05 December 2019

DOI:

10.1109/ISEE2.2019.8921227

► ISBN Information:

Publisher:

IEEE

Conference Location:

Ho Chi Minh City, Vietnam

I. Introduction

At present, disaster problems are one of the obstacles in improving the quality of human resources as well. Disasters caused by movable land are a serious threat faced by the world's population. Landslides are ranked third in the frequency of disasters in the tropics. In the case of landslides, the physical magnitude of the causes of landslides can be measured scientifically, it can be predicted correctly. Land shift is a complex event and depends on many factors. However, some parameters can be known, one of which is the movement of land on a slope. With reference to these conditions, a breakthrough must be sought with the intention that prevention of disasters can be improved by using efficient and efficient communication and information technology. The limited amount of power can be overcome by a simple but efficient telemetry model. Therefore we need a piece of equipment to read the soil conditions to be sent to data centers that are in different places, so that analysis can be carried out. An instrument inclinometer is one tool that is often used in measuring soil movements. The use of these sensors is quite famous because of their small dimensions, high sensitivity and accuracy, low power supply, and low cost [1]. The use of an inclinometer can only detect the slope of the ground. Whereas

Sign in to Continue Reading

 nge in slope of the land, but the value of the shift to the starting point cannot be detected. Ther equipment that is relevant for measuring the amount of soil displacement within a certain period of time. Data on ground movement conditions that can be sent to the monitoring center are signals from translation positions that can be read from the sensor. The shift signal captured by the sensor can be stored and transmitted as needed. On the other hand, a disaster telemetry system is needed that can be made at a low cost. The purpose of this study is to produce a telemetry system for monitoring the shift of land at low speeds with high quality. The main objective of this study was to obtain a sensor design method and telemetry system for the purpose of monitoring land shifts. The benefit for science is the development of monitoring methods using laser light that have not been done so far. The results of this study will be useful for the development of methods for measuring land shifts. The significance of this research for science is the development of a method of applying sensors using laser light which has not been done so far. Recording is done by using a web-based data logger by sending visual measurement data to the data center. The accuracy of the laser beam that spreads when it is received on the target board, is done using the center cluster method.

Authors	▾
Figures	▾
References	▾
Keywords	▾
Metrics	▾

More Like This

Internet enabled tipping bucket rain gauge

2014 International Conference on Computer Communication and Informatics

Published: 2014

RainWatch Project: Location-Awared Realtime Detection and Notification of Rain on Internet-Based Sensor Network

2009 Ninth Annual International Symposium on Applications and the Internet

Published: 2009

Show More

Feedback

IEEE Personal Account	Purchase Details	Profile Information	Need Help?	Follow
CHANGE USERNAME/PASSWORD	PAYMENT OPTIONS	COMMUNICATIONS PREFERENCES	US & CANADA: +1 800 678 4333	<div>f in</div>
	VIEW PURCHASED DOCUMENTS	PROFESSION AND EDUCATION	WORLDWIDE: +1 732 981 0060	<div></div>
		TECHNICAL INTERESTS	CONTACT & SUPPORT	

About IEEE Xplore | Contact Us | Help | Accessibility | Terms of Use | Nondiscrimination Policy | IEEE Ethics Reporting | Sitemap | Privacy & Opting Out of Cookies

A not-for-profit organization, IEEE is the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity.

© Copyright 2022 IEEE - All rights reserved.