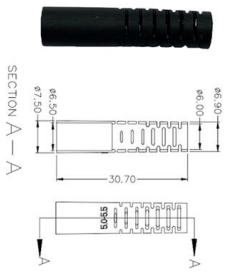
FRINDEL OPTICS

Experimental Errors in Fiber Optic Sensor Measurement

Overview

Landslide displacement monitoring is an efficient method to mitigate casualties and economic losses caused by landslide disasters.

Experimental Errors in Fiber Optic Sensor Measurement



Error Analysis and Measurement Uncertainty for a Fiber

For the first time, to our knowledge, we have demonstrated the feasibility of estimating the measurement uncertainty for simultaneous strain

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Error analysis and experimental research of joint fiber-optic

Aiming at solving this issue, a new joint fiber-optic displacement sensor which can achieve accurate displacement monitoring, was designed. Its measurement error was analyzed and the

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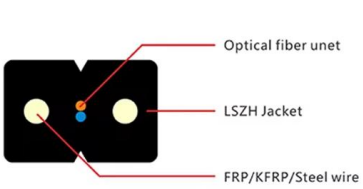

Modeling and experimental studies on retro-reflective fiber optic micro

FODS using plastic fibers are analyzed for force or pressure measurement . Buchade and Shaligram studied the effect of angle between transmitting and receiving fiber on the

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Modeling and experimental verification of polarization errors in Sagnac

Sagnac fiber optic current sensor (S-FOCS) is a kind of optical interferometer based on Sagnac structure. S-FOCSs are now achieving increased acceptance and application in high voltage

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Analysis and elimination of bias error in a fiber-optic

Design principle for sensing coil of fiber-optic current sensor based on geometric rotation effect Chunxi Zhang, Chuansheng Li, Xiaxiao Wang, Lijing Li, Jia Yu, and

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Temperature measurement with error suppression based on dual

Accurate measurement methods based on fiber-optic sensors have been widely applied in many scientific fields with the advantages of wide measurement range, high sensitivity, anti

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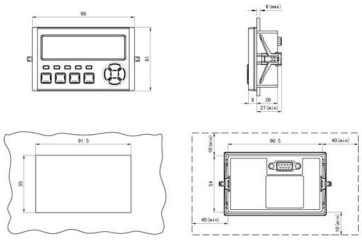

Experimental investigation on buried pipeline bending deformation

Although distributed fiber optic sensing can achieve strain measurement accuracy as high as ±1 u?, such sensors are often mechanically vulnerable and typically have a limited effective strain

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Theoretical and experimental study on fiber-optic displacement sensor

A novel and simple fiber-optic sensor for measuring a large displacement range in civil engineering has been developed. The sensor incorporates an extremely simple bowknot bending

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(PDF) Measurement-Error Analysis of Fiber Bragg

The accurate measurement of slope displacement profiles using a fiber Bragg grating flexible sensor is limited due to the influence of accumulative

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Modeling and experimental verification of polarization errors in Sagnac

Finally, we simulate and quantify nonreciprocal phase shift to be detected in fiber optic current sensor related with optical polarization errors. In the end, we demonstrate S-FOCS in test.

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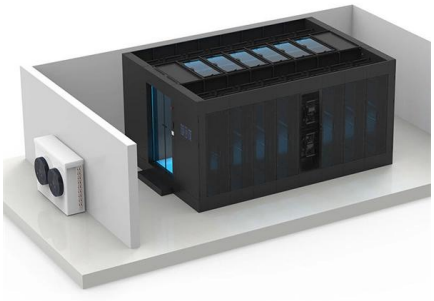

Error analysis and experimental research of joint fiber-optic

The results show that: the fiber-optic sensor measurements are consistent with soil shear displacement value with high accuracy and sensitivity. The sensor can accurately monitor the

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Ways to Reduce the Errors of a Fiber-Optic Low-Pressure Sensor

The problem of improving the metrological characteristics of an attenuator-reflective low-pressure fiber-optic sensor located in narrow cavities with uneven surfaces, in particular, in life

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Measurement error analysis of surface-bonded distributed fiber-optic

Here, a theoretical model was proposed for the analysis of strain transfer mechanisms in surface-bonded distributed fiber-optic sensors due to linear strain gradients.

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Optical Fibre-Based Sensors--An Assessment of

Abstract Optical fibre sensors are an essential subset of optical fibre technology, designed specifically for sensing and measuring several physical parameters.

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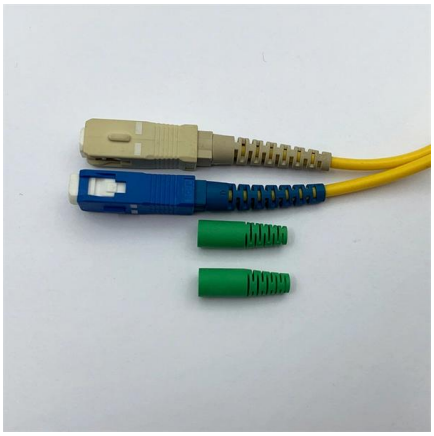

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The Nonreciprocal Errors in Fiber Optic Current Sensors

Fiber-optic current sensors have the significant advantages that they are non-conductive and lightweight, which can allow much simpler insulation and mounting designs. In addition, optical

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Measurement error analysis of surface-bonded distributed fiber-optic

Here, a theoretical model for strain transfer analysis of surface-bonded multi-layered fiber-optic sensor subjected to a linear gradient strain was established.

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Error analysis and experimental research of closed-loop fiber optic

A fiber optic current sensor suitable for electric power system is introduced. In order to improve the measurement accuracy of FOCT, a closed-loop signal detection method based on

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Error Analysis and Measurement Uncertainty for a Fiber Grating Strain

In this paper, we present an evaluation of error analysis and measurement uncertainty for a reference dual-wavelength grating sensor system. The theoretical strain and temperature dependent

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Measurement-Error Analysis of Fiber Bragg Grating

Monitoring geotechnical structures and providing real-time early warning is a key measure to mitigate the impacts of disasters (slope slip,

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Error Analysis and Experimental Research of Joint Fiber-Optic

Aiming at solving this issue, a new joint fiber-optic displacement sensor which can achieve accurate displacement monitoring, was designed.

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Strain Measurement Technology and Precision

In this paper, accuracy calibration experiments and the related analyses of two fiber-optic sensing technologies, the fiber-optic grating (FBG) and

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Repeatability precision error analysis of the distributed fiber optic

Distributed fibre optic sensors for measuring strain and temperature of cast-in-situ concrete test piles. In: Proceedings of the International Conference on Smart Infrastructure and

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Surface roughness measurement based on fiber optic sensor

The multi-wavelength fiber sensor for measuring surface roughness and surface scattering characteristics were investigated. In this paper, specimens with different surface roughness were

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Numerical and experimental study of a multimode optical fiber sensor

These assumptions are then verified experimentally with two experimental setups by measuring the refractive index at 1550 nm of reference solutions (distilled water-isopropanol and

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Error Analysis and Measurement Uncertainty for a Fiber Grating Strain

To our knowledge, this is the first time that the measurement uncertainty for simultaneous strain-temperature sensing was demonstrated for fiber grating sensors.

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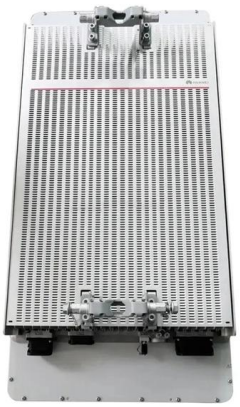

Error Analysis and Experimental Research of Temperature/Strain

The temperature measurement error is 1.64°C, and the strain measurement error is 20.04 u?, which is consistent with the theoretical analysis. The sensing results provide technical reference

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Fiber fusion splicing error analysis of all-fiber optic current sensor

Measurement accuracy is essential for the all-fiber optic current sensor. Angle errors of axis alignment in the fusion processing affect the measurement accuracy with different modulation and

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