

Pulse-phase fiber optic sensor





Overview

We propose and demonstrate a new method of phase-shifting optical fiber sensing, wherein rectangular-pulse binary phase modulation is imposed on the laser source of an interferometric fiber optic sens.



Pulse-phase fiber optic sensor



Error Analysis and Suppression of Rectangular-Pulse

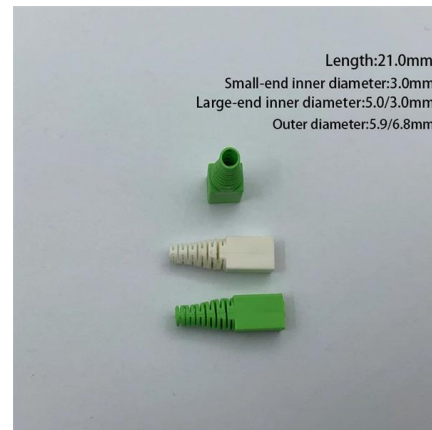
These two are the main sources of error. In view of this, we systematically analyze the sampling interval and modulation depth involved in the

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Phase-shifting optical fiber sensing with rectangular-pulse binary

We propose and demonstrate a new method of phase-shifting optical fiber sensing, wherein rectangular-pulse binary phase modulation is imposed on the laser source of an

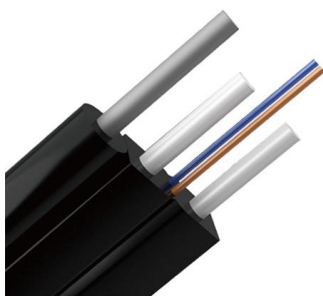
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Random optical parametric oscillator fibre sensor

This first demonstration of a R-OPO fibre sensor establishes the foundations for parametric fibre sensors.

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Pulse Wave Velocity Measurement with Multiplexed Fiber Optic Fabry

The paper presents the fiber-optic pulse wave velocity sensor, based on the multiplexed extrinsic Fabry-Perot interfer-ometers interrogated by the spectral interferometric approach.



A Fiber Phase-Sensitive Optical Time-Domain Reflectometer for

Abstract-- A new architecture of a fiber phase-sensitive optical time-domain reflectometer (?-OTDR, i.e., a distributed acoustic sensor) suitable for engineering geology

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A high-quality phase modulation scheme with strong noise

In conclusion, we present a new high-quality LPF-assisted RPB modulation method for interferometric fiber-optic sensor applications. This method has good noise suppression capability in

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Phase-Sensitive Optical Time-Domain Reflectometry-Based Audio

Therefore, this article introduces the ? -OTDR-based fiber-optic distributed acoustic sensor (DAS), and demonstrates its ability in demodulating and reproducing audio from external

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Assessing the Interplay between Probe Power and Pulse Width in

We discuss the performance of the distributed fiber optic sensor (DFOS) interrogation unit based on the phase-optical time domain reflectometry (?-OTDR) principle.

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Distributed optical fiber sensor based on modulated dual-pulse probe

A distributed fiber sensor based on Rayleigh scattering is described which converts vibration-induced optical phase changes into optical intensity variations by using modulated dual-pulses injected into

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Dual pulse heterodyne distributed acoustic sensor

Abstract Distributed Acoustic Sensor (DAS) has potential in applications such as hydroacoustic detection. In this paper, a dual-pulse

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Pulse Wave Measurement Using Fiber-Optic Intermodal Interferometric Sensor

A singlemode-multimode-singlemode fiber-optic interference sensor was studied in terms of its efficiency for pulse wave signal measurement. It was shown that interference of lower-order modes of

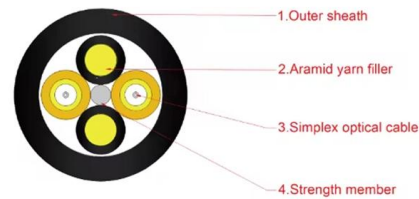
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Performance improvement of optical fiber sensor based on phase

Phase-sensitive optical time-domain reflectometry (ϕ -OTDR) has the advantages of high accuracy, large dynamic range and wide measurement range. It is suitable for remote monitoring of

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Frequency multiplexed dual-pulse fiber-optic ϕ -OTDR

In this paper, we propose a novel, to the best of our knowledge, fading-free fiber sensor structure by incorporating an acousto-optic frequency

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A Novel Phase Demodulation Method and Simulation for Fiber-Optic

Fiber-optic distributed acoustic sensors (DASs) can be used for various applications, such as seismic wave detection, geological exploration, and large-scale structural health monitoring.

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Continuous arterial pulse wave monitoring using a fiber optic Fabry

This investigation successfully developed and validated a novel fiber optic Fabry-Perot interferometer system utilizing quadrature phase demodulation for continuous arterial pulse wave

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A Polarization-Space Michelson Interferometric Fiber-Optic Vibration

Abstract: A polarization-space Michelson interferometric fiber-optic vibration sensor is proposed and experimentally demonstrated. A phase-coherent dual-frequency optical pulse with two orthogonal

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Recent Advancements in Optical Fiber Sensors for Non

Download Citation , Recent Advancements in Optical Fiber Sensors for Non-Invasive Arterial Pulse Waveform Monitoring Applications: A Review , The awareness of the importance of

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Frequency-modulated dual-pulse phase-sensitive optical time-domain

In this paper, frequency-modulated dual-pulse probe is utilized to achieve quantitative demodulation of external vibrations in phase-sensitive optical

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Dual-pulse phase-OTDR-based distributed optic-fiber acoustic sensor

Distributed fiber sensing performance is evaluated for this frequency actively compensated sensor system, showing significant improvement in both long-term stability and signal-to-noise ratio

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Dual-pulse phase-OTDR-based distributed optic-fiber

We report a novel, to the best of our knowledge, distributed optic-fiber acoustic sensor in which active laser frequency compensation is proposed to

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All fiber optic current sensor based on phase-shift fiber

An all fiber optic current sensor (AFOCS) utilizing ordinary optical fiber is proposed and demonstrated, which is implemented with a phase-shift fiber

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Pulse Wave Measurement Using Fiber-Optic Intermodal Interferometric Sensor

Markvart, Aleksandr Kulik, Daria Petrov, Alexander Liokumovich, Leonid Ushakov, NikolaiThe paper presents a fiber-optic pulse wave sensor based on an intermodal interferometer

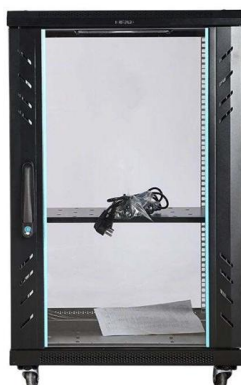
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Random optical parametric oscillator fibre sensor

This work introduces a random optical parametric oscillator (R-OPO) fibre sensor that addresses these challenges.

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Fiber Optic Sensors: Fundamentals, Principles & Applications

Equipped with safety features and remote fault monitoring.

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