

Preview

In this paper, we present a dynamic calibration method for FBG sensor temperature measurement, utilizing the online sequential extreme learning machine (OS-ELM). A demodulation algorithm is vital for a fiber Bragg grating (FBG) sensing system. Determining the wavelength shift is the most important issue in precise measurements of. FMCW lidar offers higher sensitivity and virtually interference-free operation when compared to conventional time-of-flight lidar. In all these applications, a way to discriminator with poor characteristics. During the measurement process, the calibration model is continuously updated instead of retrained, which can reduce tedious calculations. Abstract This paper presents a field guide to nonlinear calibration of Fiber Bragg Gratings (FBG1,2) for temperature sensors with a wide temperature range. An FBG which is used for a wide temperature range needs an expensive calibration curve measured for this particular FBG to enable the.

In this article, a tracking-based high-speed demodulation method for FBG sensing systems based on the wavelength-tunable laser is proposed. The wavelength-tunable laser only

A notable example is the use of ML to resolve cross-sensitivity problems, such as distinguishing temperature from strain in a single Fiber Bragg

Facing the challenges in field monitoring of the mechanical response of geogrids in asphalt pavements, this study integrated two types of Fiber Bragg Grating (FBG) sensors, unarmored and

ABSTRACT The aim of this article is to introduce an innovative algorithm for the calculation of the shift of the maximum reflectivity wavelength of

Based on the influence of hysteresis and creep of piezoelectric ceramics, a tunable F-P filter is calibrated with a standard to locate the central wavelength reflected by fiber Bragg grating. In

A demodulation algorithm is vital for a fiber Bragg grating (FBG) sensing system. In this paper, a novel demodulation algorithm based on the variable-step-size method and cross-correlation algorithm is

Real-time dynamic calibration is essential to improve the measured accuracy of the sensor. In this paper, we present a dynamic calibration method for FBG sensor

Our technique exploits the reflection characteristics of fiber Bragg gratings written in polarization-maintaining fibers to create a frequency discriminator, which is able to convert PM/FM signals into

Calibration Method for Fiber Bragg Grating Demodulator

It examines quasi-distributed sensing approaches, including fiber Bragg gratings (FBGs), and addresses mitigation techniques for temperature-strain cross-sensitivity. A comparative analysis

U.S. Patent Application US20090123111A1 for systems and methods comprise or involve optical fibers having Bragg gratings. The optical fibers can be assembled in a parallel manner into a fiber sensor

Optical fiber technology has rapidly progressed over the years, providing valuable benefits for biosensing purposes such as sensor miniaturization and the possibility for remote and

Our numerical program uses the transfer matrix method and the Nelder-Mead simplex algorithm. It can be easily implemented in the case of twin Bragg gratings. A twin grating is

In order to improve the accuracy of the fiber bragg grating (FBG) demodulation system and the spectral flatness of the tunable laser, a calibration scheme and flatness optimization method for effectively

In this study, a novel drift calibration method based on two-stage decomposition and hybrid modeling is proposed.

The vibration measurement of spacecraft structures in space applications has raised higher requirements for the demodulation frequency of the fiber Bragg grating (FBG) demodulator. In

However, the evaluation methods and monitoring technologies for composite tanks under cryogenic experiments are still challenging problems. In this paper, fiber Bragg grating (FBG) is used

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