Fiber Optic Sensing Demodulation Algorithm

A fast real-time demodulation method based on the coarsely sampled spectrum is proposed for transient signals of fiber optic extrinsic Fabry-Perot interferometers (EFPI) sensors.

In this article, we proposed an approach of strain demodulation using a fiber-optic Fabry-Perot (FP) sensor based on Gramian angle field (GAF) algorithm and deep learning with sparse sampling points.

A fiber-optic F-P pressure sensor is used to verify the performance of the 1D-CNN algorithm; the principles of sensors and convolution are described in Section II.

We propose a phase demodulation algorithm in interferometric fiber-optic sensing systems based on 3 × 3 coupler demodulation with high robustness and strong disturbance resistance,...

A fiber optic current sensor (FOCS) demodulation algorithm based on differential-self-multiplication (DSM) is proposed, which is insensitive to the variation in phase modulation depth.

The feasibility and superiority of the algorithm were verified through MATLAB simulations and conducted demodulation experiments using fiber optic MEMS Fabry Perot sensors.

This paper presents a method that integrates neural networks with arrayed waveguide gratings (AWGs) for the demodulation of fiber-optic sensors based on the Vernier effect and a novel, to our ...

Based on the traditional PGC DCM demodulation scheme, we propose a algorithm to eliminate the carrier phase delay and compensate the modulation depth of PGC phase demodulation.

To address the contradiction between speed and accuracy in the demodulation algorithms of fiber optic Fabry-Perot temperature sensors, as well as the problem of the low accuracy of existing neural ...

Through the improvements to the traditional nonlinear differential fringe center algorithm, stable demodulation of the fiber optic sensor was introduced using dispersion in the demodulation ...

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