

The experimental results demonstrate the superior performance of our proposed FBG demodulation scheme, achieving a remarkable 50.1% and 62.6% improvement in prediction ...

Fiber Bragg gratings are reflective structures in the core of an optical fiber with a periodic or aperiodic perturbation of the effective refractive index.

A novel approach to fibre Bragg grating spectra processing is proposed. The method is based on the use of nonlinear filtration and raising the spectrum value to the second power.

This research presents a novel machine learning algorithm based on the Gaussian Mixture Model (GMM) to enhance the demodulation accuracy of the FBG sensor.

The conventional fiber Bragg grating (FBG) accelerometer demodulation often suffers from high-environmental sensitivity, complexity, and cost. To address these issues, this article presents two ...

The demodulation algorithm based on 3 × 3 coupler in a fiber-optic hydrophone array has gained extensive attention in recent years. The traditional method uses a circulator to construct the normal ...

Accurate and rapid demodulation plays a crucial role in fiber Bragg grating (FBG) sensing systems. The Fabry-Perot (F-P) filter is a dependable demodulation technique with excellent ...

Several studies have proposed innovative demodulation methods to enhance the speed and accuracy of FBG interrogation systems. These methods to improve demodulation frequency can ...

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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 ...

Spectral interrogation of fiber Bragg gratings (FBGs) in the ~850 nm band remains relatively uncommon, largely due to the limited availability of commercial instruments and the restricted applicability of ...

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