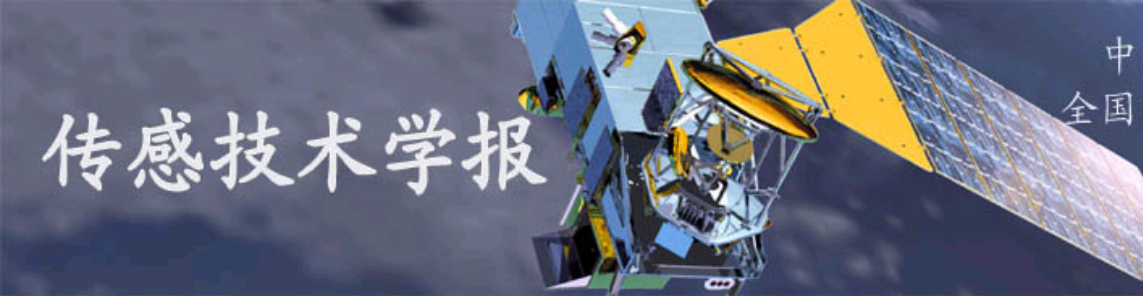

一种光纤光栅振动与温度同时区分测量的解调方法

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摘　要：

研究了一种可实现振动与温度同时区分测量的光纤光栅解调方法。利用放大自发辐射光源在1530 nm附近有一段线性区传感器中的温度与振动信号区分开而实现两者的区分测量。实验证明了此方案的可靠性，解调系统的静态波长灵敏度到了0.56 pm和0.044℃。该解调系统结构简单、成本低、分辨率高，可以实现对温度与振动同时监测的工程应用。

关键词：光纤光学；光纤传感；边缘滤波；波长解调；振动传感器

The FBG simultaneous measurement of vibration and temperature Demodulation method I

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Abstract:

A fiber grating demodulation method was studied for simultaneous discriminating measurement of vibration and temperature linear sideband near 1530 nm, so we can make use of it to realize filtering demodulation. The temperature and vibration signa measurements. the scheme was dependability, which the experiment proved. The system static wavelength sensitivity of 178 resolutions reseache to 0.56 pm and 0.044℃. The demodulation system have the simple structure, the low cost, and the high application to monitoring for the temperature and vibration.

Keywords: Fiber optics; Fiber sensing; Edge filter; Wavelength demodulation; Vibration sensor

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