

## Accepted Manuscript

Title: A novel demodulation scheme for high precision quasi-distributed sensing system based on chaotic fiber laser

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PII: S0924-4247(15)30087-X  
DOI: <http://dx.doi.org/doi:10.1016/j.sna.2015.07.033>  
Reference: SNA 9265

To appear in: *Sensors and Actuators A*

Received date: 20-4-2015  
Revised date: 27-7-2015  
Accepted date: 28-7-2015

Please cite this article as: Jun Zhang, Lingzhen Yang, Huanhuan Yang, Li Zhang, Juanfen Wang, Zhaoxia Zhang, A novel demodulation scheme for high precision quasi-distributed sensing system based on chaotic fiber laser, Sensors and Actuators: A Physical <http://dx.doi.org/10.1016/j.sna.2015.07.033>

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**A novel demodulation scheme for high precision quasi-distributed sensing  
system based on chaotic fiber laser**

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### Highlights

- A novel demodulation scheme for strain measurement based on chaotic fiber laser is proposed for a high precision quasi-distributed sensing system.
- Using a cross-correlation algorithm, strain sensing and precise locating can be simultaneously achieved based on the amplitude variation and time delay of a cross-correlation peak.

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