Helical Vibrating Optical Cable Model

To evaluate the repeatability and stability of the fiber-optic cable sensing system, box plot analyses were conducted for SNR measurements at four different vibration frequencies (30 Hz, 40 Hz, 50 Hz, and ...

Using techniques from algebraic topology, we know that there is a mathematical foundation for deforming a helically wound fibre into a straight fibre for a DAS system. We model what occurs as a ...

These Sensors can be classified into three categories from the perspective of their sensing principles, namely, helical fiber sensors based on mode coupling, interference, and circular ...

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One such technology that has seen rapid development over the past decade is Distributed Acoustic Sensing (DAS), a system that repurposes a fiber optic cable so that it can detect vibrations along the ...

In this study, we propose a new type of HWC (Helical Wound Optical Cable) based distributed acoustic sensing technology for onshore seismic acquisition. In addition, we present the results of relevant ...

This paper provides a simplified model for computation of changes in the group velocity of transverse electric and trans-verse magnetic waves propagating down a straight stretched fiber.

A 3D finite element model developed using COMSOL Multiphysics quickly and efficiently assessed the effects of various materials surrounding a helically wound cable for simple geometry for ...

We suggest using distributed acoustic sensing systems with fibres helically wound around cables. One increases the fibre sensitivity to broadside waves by decreasing the fibre wrapping angle...

Field evaluation of a helical fiber-optic cable for near-surface seismic acquisition with DAS A. Egorov2, P. Golikov1, A. Bakulin1, K. Tertyshnikov3, R. Pevzner3 di Aramco;

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