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Paper: L-Band Multiwavelength Single-Longitudinal Mode Fiber Laser for Sensing Applications

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Abstracts: In this work, a novel single-longitudinal-mode (SLM) four-wavelength laser configuration for sensing applications in the L-band is proposed and experimentally demonstrated. The sensor system presented here is based on ring resonators, and employs fiber Bragg gratings to select the operation wavelengths. The stable SLM operation is guaranteed when all the lasing channels present similar output powers. It is also experimentally demonstrated that when a SLM behavior is achieved, lower output power fluctuations are obtained. Characterization of the lasing structure for temperature sensing is also shown