

Dependence of the Brillouin frequency shift on strain and temperature in a photonic crystal fiber

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The dependence of the Brillouin frequency shift on strain in a photonic crystal fiber (PCF) was measured at a wavelength of 1320 nm for the first time to the authors' knowledge. Together with measurements of the dependence of the Brillouin frequency shift on temperature in the PCF, we demonstrate the feasibility of the highly precise simultaneous measurement of temperature and strain by use of the PCF in a distributed Brillouin sensing system with a spatial resolution of 15 cm. © 2004 Optical Society of America

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