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Enhanced Optical Fibers for Next Generation Distributed Sensing

Distributed sensing applications typically rely on Rayleigh back scattering in standard optical fibers. We show that such scattering can be greatly increased in a new generation of senso fibers. Signal to noise improvements in excess of 10dB are possible in sensor fibers with both single and multiple cores. Enhanced scattering fibers offer enabling performance improvements for applications ranging from seismic sensing of oil wells, security systems and earthquakes, to medical shape sensing and structural health monitoring in future smart cities.

Biography

Paul Westbrook has degrees in Physics from the University of Michigan (B.S.) and MIT (PhD). In 1998, he joined the optical fiber research department at Bell Laboratories in Murray Hill, NJ. He is currently a technical manager at OFS Labs which was formed after the sale of the Lucent optical fiber business to Furukawa in 2001. He has worked on several optical technologies, including fiber sensors, polarization measurement, fiber lasers, optical fiber gratings, and photonic crystal fibers. He is a coauthor or coinventor on over 100 publications, conference proceedings, and patents. He has served as a committee member or chair for several conferences, including OFC, CLEO, IPC, BGPP, and CLEO Europe. He is currently an associate editor at APL Photonics, and was an associate editor at Fiber and Integrated Optics and IEEE PTL in the past. In 2017 he was elected a Fellow of the OSA.

KEYNOTE SPEAKER