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Distributed Acoustic Sensing - From Interrogators to Environmental Monitoring

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Abstract

Distributed Acoustic Sensing (DAS) is a fiber optic sensing technique that typically utilizes light pulses and Rayleigh backscattering/OTDR to detect longitudinal strain temporally and spatially. The output is inherently noisy but also can have high spatial resolution, which presents uniquely challenging but valuable acoustic data. While working at Los Alamos National Laboratory I was part of a few projects that utilized DAS, one of which looked at comparing interrogator units from competing manufacturers, one that aimed to detect and identify bird species along the fiber, and another that attempted to identify ideal configurations for rapid deployment applications. Within this presentation, I will give an overview of the technology, the findings from the works done, and the work that still needs to be done.

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