

## **APPLYING SPECTRAL ESTIMATION TECHNIQUES TO ACOUSTIC COLOR MEASUREMENT**

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Recent years have witnessed increasing research into the use of wideband, widebeam, low frequency sonar whose purpose is to excite and observe an object's structural response. Considerable effort has been directed toward studying the scattering physics, but less work has been done to optimize the signal processing used for extracting information from data collected at sea under realistic conditions. Specifically, the interplay between signal properties, sources of noise, and signal processing parameters is not well understood. This work draws upon the spectral estimation literature to provide a framework for understanding this trade space and for designing a suitable signal processing architecture.