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Robust Capon Beamformer for Port/starboard Discrimination of
Twin-line Array

Zaixiao Gong

National Laboratory of Acoustics, Institute of Acoustics, Chinese Academy of Sciences, NO.21,
Bei-Si-huan-Xi Road, 100080 Beijing, China

Compared with the single-line array, the twin-line array have the potential to solve the port/starboard discrimination problem. Conventional method of geometric phase shifting has been used to distinguish the port/starboard of the target. But it can only be used to solve the problem when the frequency bandwidth is limited. The method based on optimum beamforming for hydrophone triplets can hardly be applied with the twin-line arrays. Aimed at the twin-line arrays port/starboard discrimination problem, a method based on the robust capon beamformer is proposed in this paper, which has advantages of concise algorithm and robustness against the aberration of the array shape. And the method works better with wider frequency bandwidth. Simulation and on sea experiment data are analyzed to verify the method.