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Gong et al.

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(54) **METHOD FOR TARGET DETECTION
BASED ON CORRELATION ANALYSIS OF
SPATIAL PHASE IN AN ACOUSTIC VORTEX**

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(58) **Field of Classification Search**
None
See application file for complete search history.

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(57) **ABSTRACT**

A method for target detection based on spatial phase correlation analysis of acoustic vortices comprises the steps of generating a vortex-like excitation acoustic field, receiving the scattered acoustic pressure information after the incidence of the acoustic vortex, extracting the correlation coefficient between the spatial phase of the scattered acoustic field and the reference phase matrix, and predicting the presence, size, and spatial orientation of the target to achieve the target detection function. The method breaks through the diffraction limit to detect small targets and determine their spatial positions. Using acoustic vortices as information carriers, the method provides new ideas and technical solutions for the field of target detection.

5 Claims, 6 Drawing Sheets

