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Spherical microphone arrays can be used to capture and reproduce the spatial characteristics of acoustic scenes. A mixed-order Ambisonics (MOA) approach was recently proposed to improve the horizontal spatial resolution of microphone arrays with a given number of transducers. In this paper, the performance and robustness of an MOA array to variations in microphone characteristics as well as self-noise was investigated. Two array processing strategies were evaluated. Results showed that the expected performance benefits of MOA are achieved at mid to high frequencies, and that robustness to various errors was similar to that of HOA arrays with both strategies. The approach based on minimizing the error of the reproduced spherical harmonic functions showed better performance at high frequencies for the MOA layout.

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