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Authors: Megan R. Warren, Daniel T. Sangiamo, Joshua P. Neunuebel



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High Channel Count Microphone Array Accurately and Precisely Localizes Ultrasonic Signals from Freely-Moving Mice

Megan R. Warren¹, Daniel T. Sangiamo¹, Joshua P. Neunuebel^{1*}

¹ Department of Psychological and Brain Sciences, University of Delaware, Newark, Delaware, USA

* Corresponding author:

Joshua P. Neunuebel
University of Delaware
Department of Psychological and Brain Sciences
105 THE GRN, RM 108
Newark, DE 19716
jneun@udel.edu
302-831-4811

HIGHLIGHTS

- Novel approach for localizing vocal signals from freely moving mice robustly and repeatedly worked on an array with 8 microphones, but is applicable to arrays with 4 channels.
- Automated vocal signal detection algorithm facilitated the sound source localization process.
- Automated tracking software determined mouse position at the time of vocal signal emission and enabled probabilistic determination of which mouse vocalized.
- For assigned signals, the system correctly identified the vocalizing mouse over 98% of the time.

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