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Title: **Improving accuracy of sound source localization using machine learning methods**

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Abstract:

The localization and quantification of sound sources is very important in solving acoustic problems, performing sound design, and meeting acoustic regulations. In this regard, methods of localizing sound sources with a microphone array such as beamforming are widely used because they can provide a real-time analysis of the sound environment. However, classic beamforming has some limitations regarding its accuracy for the localization and quantification of sound sources if the sources are too close to one another, or the environment is not free from reflections. Post-processing techniques can be used to correct these problems, but with limited accuracy and sacrificing real-time analysis. To improve the actual solutions, new machine-learning-based techniques for beamforming are proposed which offer better accuracy than the post-processing techniques normally used, while maintaining real-time computation.

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