

Phase Retrieval in Audio Processing and Ptychography: From Traditional Methods to Deep Learning

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Phase retrieval from amplitude-only measurements is a common task that appears in diverse scientific fields. Recognizing the conceptual similarity between ptychographic measurements and the short-time Fourier transform (STFT), often used in audio processing, our interdisciplinary research focuses on phase retrieval methods in these two domains. We present several recent contributions exhibiting how advances in one domain can be effectively applied to the other, leading to improved phase retrieval algorithms based on both traditional projection-based methods and data-driven deep learning approaches.

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