

## عنوان مقاله:

An Efficient Acoustic Source Separation using DCT Based Compressive Sensing and ICA Method

## محل انتشار:

یازدهمین کنفرانس بین المللی آکوستیک و ارتعاشات (سال: 1400)

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## خلاصه مقاله:

This paper presents an efficient method for blind separation of acoustic sources using the Discrete Cosine Transform (DCT) based compressive sensing approach as a method to obtain a dispersed representation of an audio signal and Independent Component Analysis (ICA) approach. The method introduces the scheme with high efficiency and minimum measurements by applying the DCT on audio signals to pack the energy of the input signal into a few coefficients before employing the ICA method. This means that the proposed technique can significantly reduce the number of samples required to represent certain audio signals and thus reduce the computational complexity of the separation approach. However, the ICA method can effectively be applied to separate the non-Gaussian signals, but this condition is not generally satisfied for audio signals. Hence, we have proposed the method with a low computational cost that can separate the acoustic sources even if all of them have the Gaussian distributions. The simulation results verify the superiority of the method over the other competing methods.

## کلمات کلیدی:

source separation; discrete cosine transform; independent component analysis; compressive sensing

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1395218>

