

Abstract Submitted
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Development of Noise Reduction Algorithm Using Physical and Computational Analysis DONGKYUN KIM , RICHARD KYUNG, Choice Research Group — Most sounds are comprised of a complex mixture of vibrations. An intricate combinations of high frequencies and low frequencies make up the integrated sound of spectrum. In this paper, computational mathematics and physics knowledge were employed to carry out the spectral analysis and to create an algorithm for removal of noise from a sound sample. First, the wave forms and the spectrums of sound file were analyzed to check its energy and the level of fuzzy tones in their harmonics. Because the entire plot of the frequency is tool lengthy and noisy to model with the Fast Fourier Transform (FFT) function in Matlab, analysis on the first few periods of the sound sample was carried out. Once the correct curve fitting for the decay of the peaks of the sound amplitude had been determined, creating an accurate computer generated denoised model of the sound was as simple as multiplying the modeled Fourier series by the curve fitted model using an algorithm.

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