

Denoising acoustic emission signal using wavelet transforms for determining the micro crack location inside of concrete

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Abstrak

Acoustic emission (AE) technique is developed to locate source of damage inside of concrete. However, the AE signal is interfered by much noise, which makes the determination of first time amplitude of AE signal is hard to be carried out. In fact, the determination of this parameter is a significant part for locating the source of damage in concrete. Therefore, one of the denoising methods called wavelet based denoising is proposed. In this case, some wavelet bases function are investigated to find out the proper wavelet bases function to perform the denoising of AE Signal. From the experimental data, the best wavelet basis function for this case is Coiflet, which is shown by providing the best SNR than the other wavelet families. In addition, the determining cracks locations on concrete can be performed easier on denoised AE signal than on noisy AE signal.