

ABSTRACT

In the industrial activity consists of several machines so that the sound signal becomes mixed. To monitor the condition of a tool with analytical vibrating techniques required a method to separate mixed signal. Blind source separation is a method to separate mixed signal, separation's result of blind source separation can be seen from mean square error (MSE). The average value of MSE separation's result of convolutive mixture 2 input between normal machine and bearing fault is 5100,924191, and MSE results of the separation of mixed signals between unbalance machine and misalignment is 9,534633. While the value of MSE signal separation results from mixed signal instantaneous linear mixture 2 inputs between normal machine and bearing fault is 0,0000007, and MSE results of the separation mixed signals between the unbalance machine and misalignment is 0,000020. The average value of MSE separation's results of convolutive mixture 3 input is 42,754061, and the average value of MSE separation's results of instantaneous linear mixture is 0,016585. Spatial aliasing only affects the magnitude of a frequency's shift, but not on the frequency patterns spectrogram each machine condition. so that the sound signal separation process can still be known characteristic of a condition of the machine through the sound signal separation results.

Keyword : *Blind Source Separation, Convolutive Mixture, Instantaneous Linear Mixture, Mean Square Error (MSE)*