

Adaptive Signal Processing

Adaptive filters can adapt their characteristics to changes of environmental conditions by updating their weights. However, a step size in the updating algorithm is a key parameter, which controls convergence of the adaptation. A large step size achieves fast convergence but causes large adaptation error. So, variable step size parameters are effective on the problem. We are studying about combining a fast adaptation algorithm with a small error one.

Moreover, frequency domain approaches are effective for achieving fast convergence. In the frequency domain, all frequency elements are independent; therefore, adaptive weights for them can be also updated independently. In our approach, we use the modified DFT (MDFT) pair to perform decomposition of an input signal to frequency signals.

