

Example 5-2: FIR convolution

For example, if h[n] is nonzero only in the interval $0 \le n \le M$, then (5.21) reduces to

$$y[n] = \sum_{\ell=n-M}^{n} x[\ell]h[n-\ell]$$
(5.22)

because the argument $n - \ell$ must lie in the range $0 \le n - \ell \le M$, so the range for ℓ in (5.21) is restricted to $(n - M) \le \ell \le n$.

McClellan, Schafer and Yoder, Signal Processing First, ISBN 0-13-065562-7. Prentice Hall, Upper Saddle River, NJ 07458. © 2003 Pearson Education, Inc.