

Equations for Sig Sys Final Project

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$$(y \star x)[n] = \frac{1}{L} \sum_{l=0}^L y[l]x[l+n]$$

$$= \frac{1}{L} \sum_{l=0}^L \left(\sum_{k=0}^L x[k]h[l-k] \right) x[l+n]$$

$$(y \star x)[k-l] = \frac{1}{L} \sum_{l=0}^L x[l-n]^2 h[n] \approx \frac{h[n]}{L}$$