PRINCIPAL NOMENCLATURE

f - a function

t - time

$\psi_i$ - ith Walsh function

$\Psi$ - Walsh Vector

$\psi_0$ - Single Walsh function

$F_T$ - Walsh coefficient vectors

e - integral Square Error

E - operational Matrix for integration of Walsh function

m - set of functions

$\Phi$ - block pulse vector

$P$ - operational matrix for integration of block pulse function

A, B, c, L - system matrices

$\tau$ - normalized time

n - dimension of the state vector

r - dimension of the input vector
\(x(t), z(t)\) - state variables

\(x_0\) - value of state at \(t = 0\)

\(u\) - input vector

\(s\) - laplace operator

\(i, k\) - indices

\(R(i)\) - block pulse value of the state vector of continuous system at \(i\)th interval

\(S(i)\) - block pulse value of the rate vector of continuous system at \(i\)th interval

\(T(i)\) - block pulse value of the second-order rate vector of continuous system at \(i\)th interval.

\(H(i)\) - block pulse value of the input vector of continuous system at \(i\)th interval

\(\sigma\) - resulting amount of overshoot

\(\zeta\) - damping factor

\(\omega_n\) - natural frequency

\(S^k, W^k\) - block pulse values of the state vector of sampled-data system at \(k\)th interval

\(Q^k, V^k\) - block pulse values of the rate vector of sampled-data system at \(k\)th interval

\(P^k, T^k\) - block pulse values of the second-order rate vector of sampled-data system at \(k\)th interval
\( x(k), z(k) \) - discrete time values of \( x(t) \) and \( z(t) \) respectively at the \( k \)th interval

\( u^*, v^* \) - input vectors in sampled-data systems

\( T_1 \) - sampling period

\( q \) - number of block pulses in each sampling period

\( N \) - sampling ratio in sampled-data system