JJG

中国地震局部门计量检定规程

中国地震局

$$S = \frac{V}{v}$$

S

V

v

$$e = \frac{(S - S_0)}{S_0} \times 100\%$$

e

S

S_0

$$e_i = \frac{S_i - S}{S} \times 100\%$$

e_i

S_i

S

v_i V_i

$$V_i = V_0 + K \times v_\mathrm{i}$$

V_i

v_i

K

V_o

$$l = \frac{\max\{|V_i - V\ _i|\}}{\mathrm{FS}} \times 100\%$$

V_i

$V\ _i$

FS

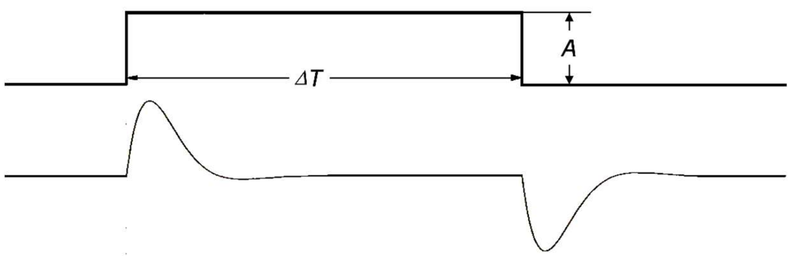
$$\mathrm{TSR} = \frac{S_{\mathrm{T}}}{S} \times 100\%$$

TSR

S_{T}

S

TSR



$x_i\left(i = 0 \quad 1 \quad \cdots \quad N-1\right)$ f_s

$0.02f_s$ x_i $x_{\max}$

$x_{\min}$ $(x_{\max} - x_{\min})/2$ $(x_{\max} - x_{\min})/\sqrt{8}$

$x_i\left(i = 0 \quad 1 \quad \cdots \quad N-1\right)$ f_s

$0.1f_s$

$$x_0(t) = A_0 \sin(\omega_0 t + \varphi_0) + d_0$$

$$\rho = \frac{1}{N}\sum_{i=0}^{N-1}[x_i - A_0 \sin(i\omega_0 T_s + \varphi_0) - d_0]^2$$

T_s

A_0 ω_0 φ_0 d_0 ρ

ω_0 A_0

$A_0/\sqrt{2}$ $\omega_0/(2\pi)$

$x_n\left(n = 0 \quad 1 \quad \cdots \quad N-1\right)$ f_s f_0

$k = Nf_0/f_s$

$$A_0 = \frac{2}{N}|X(k)| = \frac{2}{N}\left|\sum_{n=0}^{N-1} x_n \mathrm{e}^{-j2\pi n f_0/f_s}\right|$$

$A_0/\sqrt{2}$

$$H(s) = \frac{S_0 s^2}{s^2 + 2D\omega_0 s + \omega_0^2}$$

$$\begin{cases} y(t) = \frac{S_0 S_C I_C}{\omega_0\sqrt{1-D^2}} e^{-D\omega_0 t} \sin\left(\sqrt{1-D^2}\omega_0 t\right) \cdot u(t), & D < 1 \\ y(t) = S_0 S_C I_C t e^{-\omega_0 t} \cdot u(t), & D = 1 \\ y(t) = \frac{S_0 S_C I_C}{\omega_0\sqrt{D^2-1}} e^{-D\omega_0 t} \operatorname{sh}\left(\sqrt{D^2-1}\omega_0 t\right) \cdot u(t), & D > 1 \end{cases}$$

x_n T_0

$$\begin{cases} y(nT_0) = A_0 \mathrm{e}^{-D\omega_0 (n-n_0)T_0} \sin\left[\sqrt{1-D^2}\omega_0 (n-n_0)T_0\right], & D < 1 \\ y(nT_0) = A_0 (n-n_0) T_0 \mathrm{e}^{-\omega_0 (n-n_0)T_0}, & D = 1 \\ y(nT_0) = A_0 \mathrm{e}^{-D\omega_0 (n-n_0)T_0} \operatorname{sh}\left[\sqrt{D^2-1}\omega_0 (n-n_0)T_0\right], & D > 1 \end{cases}$$

$$\rho = \frac{1}{N}\sum_{i=0}^{N-1}[x_n - y(nT_0) - d_0]^2$$

A_0 n_0 d_0

ρ A_0 n_0 d_0

f_s

$X_i(k)$

$$X_i(k) = \frac{1}{N}\sum_{n=0}^{N-1} x_i(n)w(n)\mathrm{e}^{-j2\pi k \quad /N}$$

$x_i(n)$

$w(n)$

$$\hat{P}(k) = \frac{4N^2}{M\sum_{n=0}^{N-1} w^2(n)}\sum_{i=0}^{M-1}|X_i(k)|^2, \qquad k = 0,1,2,\cdots,\frac{N}{2}-1$$

$$f_k = \frac{kf_s}{N} \quad \left(k = 0,1,2,\cdots,\frac{N}{2}-1\right)$$

$$P(f_k) = \frac{N}{f_s}\hat{P}(k)$$

$x(t)$

$n_1(t)$ $n_2(t)$ $H_1(f)$ $H_2(f)$ $y_1(t)$ $y_2(t)$

$X(f)$ $N_1(f)$ $N_2(f)$ $Y_1(f)$ $Y_2(f)$ $x(t)$ $n_1(t)$ $n_2(t)$ $y_1(t)$ $y_2(t)$

$P_{12}(f)$ $y_1(t)$ $y_2(t)$

$$Y_1(f) = [X(f) + N_1(f)]|H_1(f)|^2$$

$$Y_2(f) = [X(f) + N_2(f)]|H_2(f)|^2$$ (2

P

$$N_{ii} = \frac{1}{|H}$$

$r_s(i)$ $\overline{r_s}$

$\overline{r_s}$

$\overline{r_s}$

σ $\sigma/\overline{r_s}$

