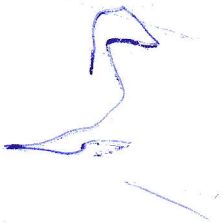
Since max lag of interest $\boxed{2n+1}$ $\boxed{-1}$

$[\ n\ ]$

need to calc:

$$\sum_{r=1}^{n}\sum_{t=1}^{n} E[f(t)f(r)]\cos(2\pi s(r-t))$$



$$= \sum \quad q$$

$q = r - t$

$t = q - r$

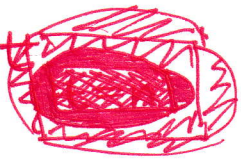
$[\ 1\ ]$ $r = t + q$.

$[\ n\ ]$

$$\sum_{q=1-n}^{n-1}\ \sum_{t=1}^{n} E[f(t+q)f(t)]\cos(2\pi s q)$$

$-n$

$t = 1-n+t$



$2-1+1$

$\sum_{1}^{2}$

$(n-1)+(1-n)$ | 1 | n

$= 2n-2+1 = 2n-1$

N.

$$\sum_{t=1}^{T}\ \sum_{q=1-T}^{T-1} E[f(t+q)f(t)]\cos(2\pi s_{max} q)$$

$$\approx \sum_{t=1}^{T}\ \sum_{q=1-T}^{T-1}\left(\frac{1}{N}\sum_{n=1}^{N} f_n(t+q)f_n(t)\right)\cos(2\pi s q)$$

$$= \frac{1}{N}\sum_{n=1}^{N}\left(\sum_{q=1-T}^{T-1}\boxed{\sum_{t=1}^{T} f_n(t+q)f_n(t)}\cos(2\pi s q)\right)$$