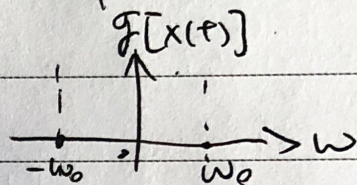


No.

Date

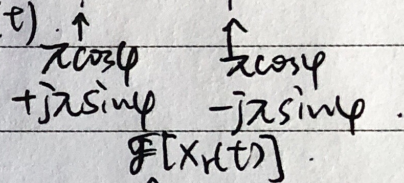
$$x(t) = \cos(\omega_0 t + \varphi) = \cos(\omega_0 t) \cos \varphi - \sin(\omega_0 t) \sin \varphi$$

$$\begin{aligned} \mathcal{F}[x(t)] &= \pi (\delta(\omega + \omega_0) + \delta(\omega - \omega_0)) \cos \varphi \\ &\quad + j\pi (\delta(\omega + \omega_0) - \delta(\omega - \omega_0)) \sin \varphi \end{aligned}$$



当 $\omega_0 < \omega_s < 2\omega_0$ 时为欠采样. 采样后恢复出的函数为 $x_r(t)$

$$\begin{aligned} \mathcal{F}[x_r(t)] &= \pi (\delta(\omega - \omega_s + \omega_0) + \delta(\omega + \omega_s - \omega_0)) \cos \varphi \\ &\quad + j\pi (\delta(\omega - \omega_s + \omega_0) - \delta(\omega + \omega_s - \omega_0)) \sin \varphi \end{aligned}$$



$\therefore x_r(t) = \cos((\omega_s - \omega_0)t - \varphi)$ 相位为 $x(t)$ 相反数

$\because \omega_0 < \omega_s < 2\omega_0 \quad \therefore \omega_s - \omega_0 < \omega_0$ 频率下降

