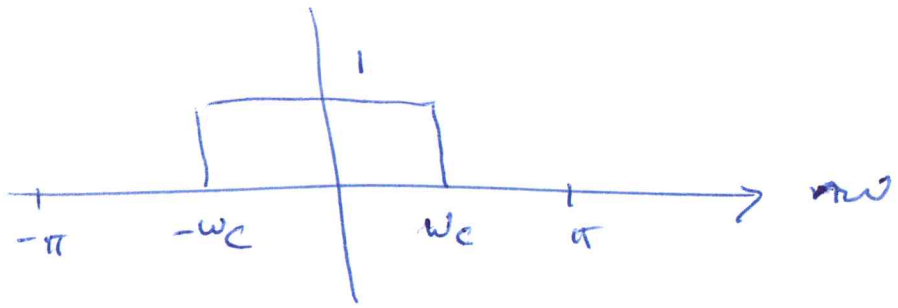
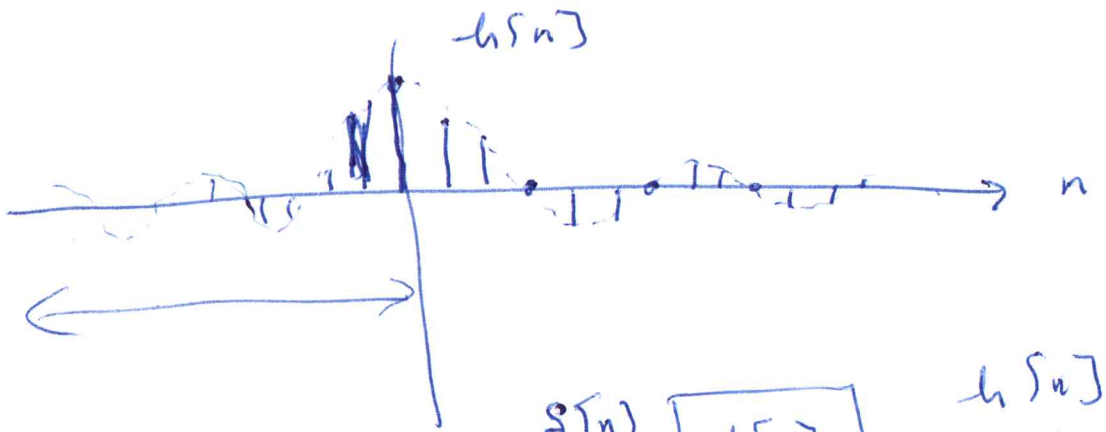
$H(e^{j\omega})$

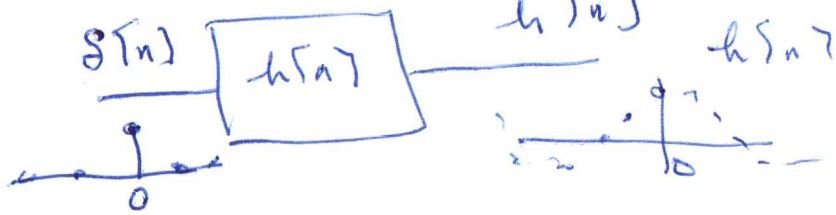


ω_c : cut off freq.

$$h[n] = \frac{1}{2\pi}\int_{-\omega_c}^{\omega_c} 1 \cdot e^{j\omega n}\, d\omega = \frac{e^{j\omega_c n} - e^{-j\omega_c n}}{jn \cdot 2\pi}$$

$$h[n] = \frac{\omega_c}{\pi}\,\frac{\sin(\omega_c n)}{\omega_c n}$$





h[n]
- real valued
- doubly ∞
  ($h[n] \neq 0$ $-\infty < n < \infty$ except for some pts)
- non-causal
- not realizable