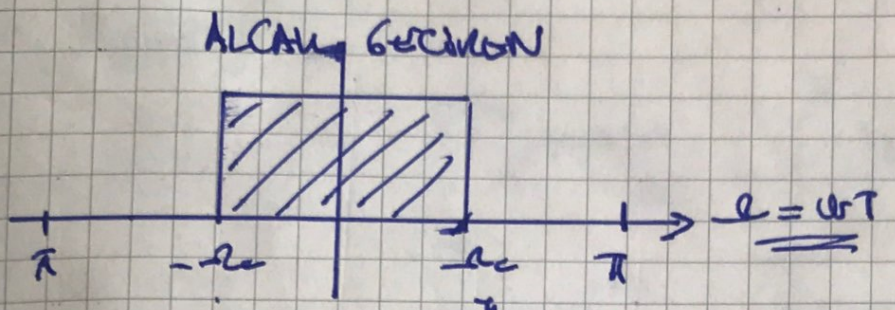

$$C(n) = \frac{1}{2\pi}\int_{-\pi}^{\pi} e^{jn\Omega}\,d\Omega$$

$$h(n) = c(n-N) = \frac{1}{2\pi}\int_{-\pi}^{\pi} e^{j(n-N)\Omega}\,d\Omega \qquad n = 0,1,2,\ldots 2N$$

$$h(n) = \frac{1}{2\pi}\left\{\int_{-\Omega c}^{\Omega c} e^{j(n-N)\Omega}\,d\Omega\right\}$$

$$= \frac{1}{2\pi}\cdot\frac{1}{j(n-N)}\cdot e^{j(n-N)\Omega}\Big|_{-\Omega c}^{\Omega c}$$

$$= \frac{1}{n-N}\cdot\frac{1}{2\pi j}\left\{e^{j(n-N)\Omega c} - e^{-j(n-N)\Omega c}\right\}$$

$$= \frac{\operatorname{Sin}(n-N)\Omega c}{(n-N)\pi} \longleftarrow \text{FIR filtre katsayıları}$$

Bütünleşikten

$$h(n) = \frac{1}{2\pi}\left\{\int_{-\Omega c}^{\Omega c}\operatorname{Cos}(n-N)\Omega\,d\Omega + \int_{-\Omega c}^{\Omega c}\operatorname{Sin}(n-N)\Omega\,d\Omega\right\}$$

$$= \frac{1}{2\pi}\cdot\frac{1}{(n-N)}\cdot\left\{\operatorname{Sin}(n-N)\Omega\Big|_{-\Omega c}^{\Omega c} - \operatorname{Cos}(n-N)\Omega\Big|_{-\Omega c}^{\Omega c}\right\}$$

$$= \frac{1}{2\pi}\frac{1}{(n-N)}\cdot\left\{\operatorname{Sin}(n-N)\Omega c + \operatorname{Sin}(n-N)\Omega c - \operatorname{Cos}(\quad)\Omega c + \operatorname{Cos}(\quad)\right\}$$

$$= \frac{\operatorname{Sin}(n-N)\Omega c}{\pi(n-N)}$$

AYNI SONUÇ.

YÜKSEK GEÇİREN

$$h(n) = \frac{1}{2\pi}\left\{ \int_{-\pi}^{-\Omega_c} e^{j(n-N)\Omega}\, d\Omega + \int_{\Omega_c}^{\pi} e^{j(n-N)\Omega}\, d\Omega \right\}$$

$$= \frac{1}{2\pi}\left\{ \frac{1}{(n-N)} \left[e^{j(n-N)\Omega}\Big|_{-\pi}^{-\Omega_c} + e^{j(n-N)\Omega}\Big|_{\Omega_c}^{\pi} \right] \right\}$$

$$= \left[\sin((n-N)\pi) - \sin((n-N)\Omega_c) \right] \frac{1}{(n-N)\pi}$$

DİKKAT $h(N) = \frac{(\pi - \Omega_c)}{\pi}$ $\quad n = 0, 1, \ldots 2N$

BAND GEÇİREN.

$$h(n) = \frac{1}{2\pi}\left\{ \int_{-\Omega_{c2}}^{-\Omega_{c1}} e^{j(n-N)\Omega}\, d\Omega + \int_{\Omega_{c1}}^{\Omega_{c2}} e^{j(n-N)\Omega}\, d\Omega \right\}$$

$$= \frac{1}{(n-N)\pi}\left[\sin((n-N)\Omega_{c2}) - \sin((n-N)\Omega_{c1}) \right]$$

$$h(N) = \frac{(\Omega_{c2} - \Omega_{c1})}{\pi}$$

BAND SÖNDÜREN

$$h(n) = \frac{1}{2\pi}\left\{ \int_{-\pi}^{-\Omega_{c2}} (\;) + \int_{-\Omega_{c1}}^{\Omega_{c1}} (\;) + \int_{\Omega_{c1}}^{\pi} (\;) \right\}$$

$$= \frac{1}{(n-N)\pi}\left[\sin(n-N)\pi - \sin(n-N)\Omega_{c2} + \sin(n-N)\Omega_{c1} \right]$$

$$h(N) = \frac{(\pi - \Omega_{c2} - \Omega_{c1})}{\pi}$$