

$$p_0 \dots p_M \in \mathbb{R}^N$$

$$w_0 \dots w_M \in \mathbb{R}^+$$

↔ weights

$$w_0 = \frac{w_0}{w_0} = 1$$

$$w_M = \frac{w_M}{w_0}$$

$$\tilde{w}_0, \tilde{w}_1, \dots, \tilde{w}_M$$

$$\tilde{w}_i = w_i \cdot \left( \frac{w_M}{w_0} \right)^{-\frac{i}{M}}$$

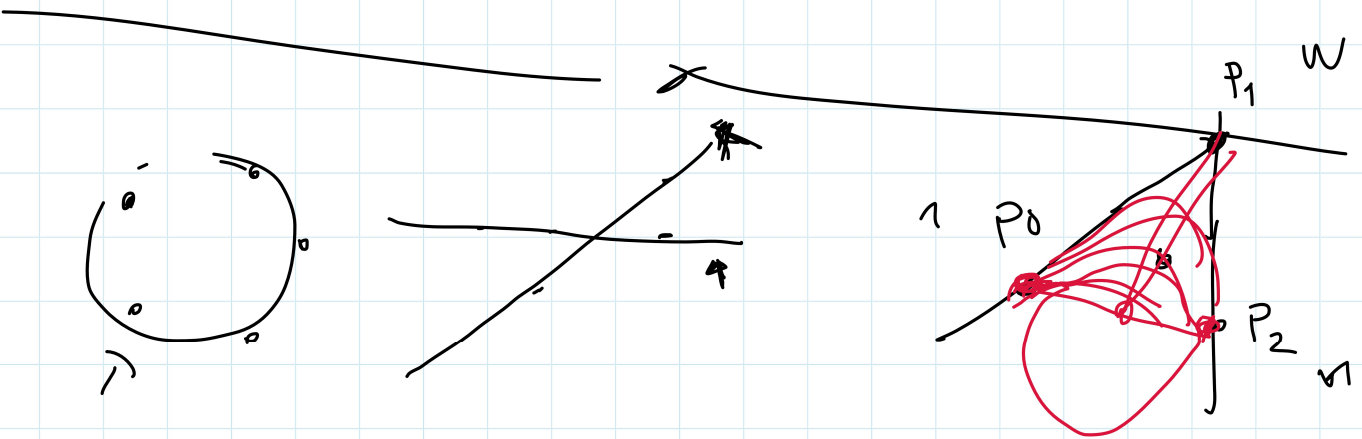
$$i=0 \Rightarrow \tilde{w}_0 = w_0 = 1$$

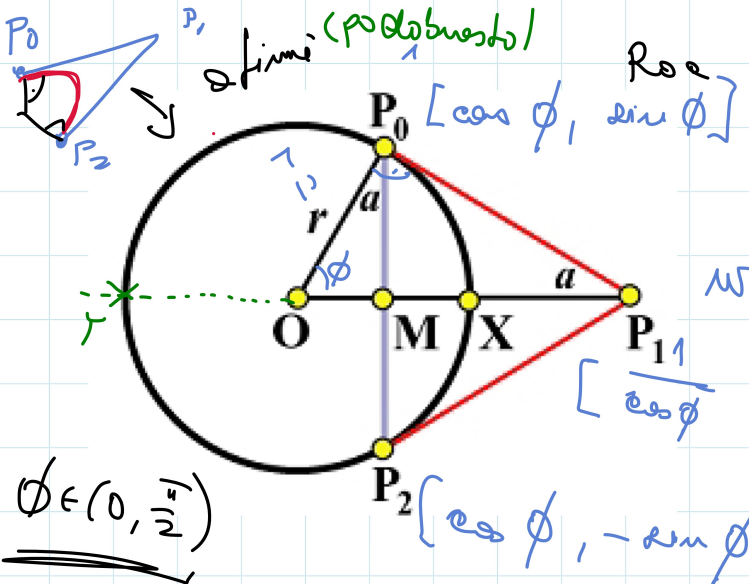
$$i=M \Rightarrow \tilde{w}_M = w_M \cdot \left( \frac{w_M}{w_0} \right)^{-1} = 1$$

↔ is zeroing

$$w = \left( \frac{w_M}{w_0} \right)^{-1} =$$

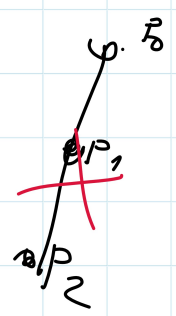
$$\left( \frac{w_M}{w_0} \right)^{-\frac{1}{M}}$$





$$|P_0 P_1| = |P_1 P_2|$$

$$w = \sin a$$



$$\phi \in (0, \frac{\pi}{2})$$

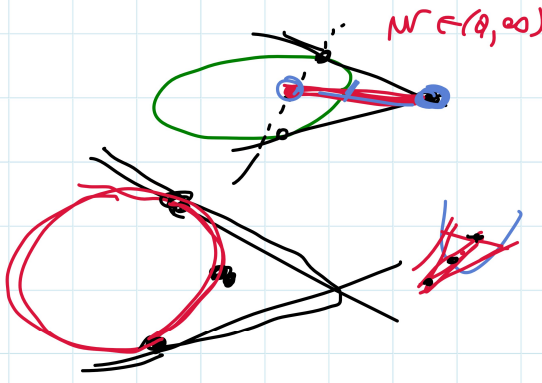
$$B_0^2(\frac{1}{2}) = B_2^2(\frac{1}{2}) = \frac{1}{4}$$

$$B_1^2(\frac{1}{2}) = \frac{1}{2}$$

$$x = c(\frac{1}{2}) = \frac{\frac{1}{4} [\cos \phi, \sin \phi] + \frac{1}{2} w [\frac{1}{\cos \phi}, 0] + \frac{1}{4} [\cos \phi, -\sin \phi]}{\frac{1}{4} + \frac{1}{2} w + \frac{1}{4}}$$

$$= \frac{\frac{1}{2} [\cos \phi + \frac{w}{\cos \phi}, 0]}{\frac{1}{2} (1+w)}$$

$$= \left[ \frac{\cos^2 \phi + w}{\cos \phi (1+w)}, 0 \right]$$

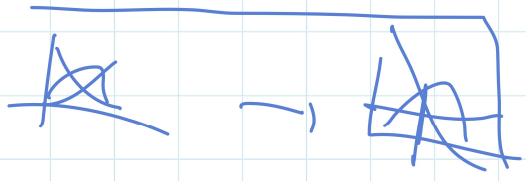


$$\cos^2 \phi + w = \cos \phi (1+w)$$

$$w (1 - \cos \phi) = \cos \phi - \cos^2 \phi = \cos \phi (1 - \cos \phi)$$

$$w = \cos \phi = \sin a$$

$$P_{\text{opt}}, c(t) = \frac{\sum_{i=0}^M w_i P_i B_i^M(t)}{\sum_{i=0}^M w_i B_i^M(t)} = \sum_{i=0}^M P_i \left( \frac{w_i B_i^M(t)}{\sum_{i=0}^M w_i B_i^M(t)} \right)$$



$$(w) F_i^M(t)$$