- CONVERGENZA in $F(\beta, m)$

Teo: Siano

- h, $[a,b]$, x_0 che verificano le ip del Teo di convergenza;
- $\varphi : M \to M$ t.c. $\forall \xi \in [a,b] \cap M$, $|\varphi(\xi) - h(\xi)| \leq \delta$

($M = F(\beta, m)$)

- $\xi_k = \varphi(\xi_{k-1}) \in [a,b]$ per ogni k

Allora: (L = p.u. di h in $[a,b]$)

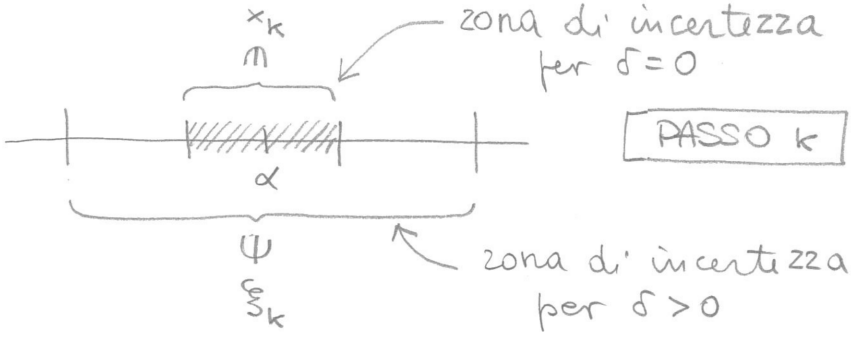
(1) $$|\xi_k - \alpha| \leq \delta + L\,|\xi_{k-1} - \alpha|$$

(2) $$|\xi_k - \alpha| \leq \frac{\delta}{1-L} + L^k \left(|\xi_0 - \alpha| + \frac{\delta}{1-L} \right)$$

dim: (1) $$|\xi_k - \alpha| = |\varphi(\xi_{k-1}) - h(\alpha)| \leq |\varphi(\xi_{k-1}) - h(\xi_{k-1})| + |h(\xi_{k-1}) - h(\alpha)| \leq \delta + L\,|\xi_{k-1} - \alpha|$$

(2) iterando il procedimento.

Ovvero:



$k \to \infty$