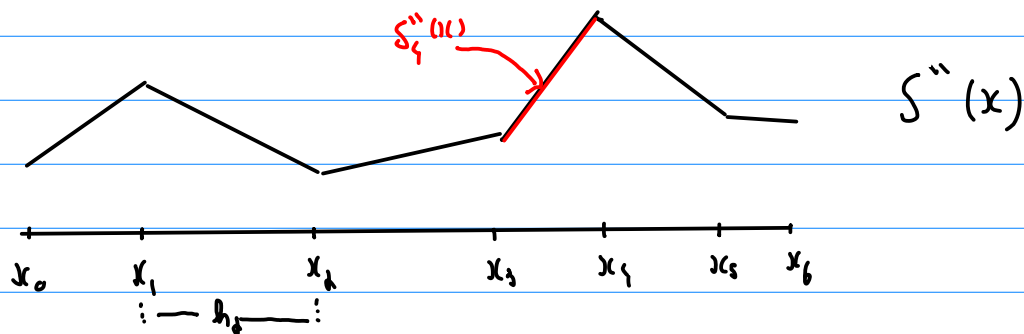


COMP III - 28/9/2021
 RASCUNHO DA DISCUSSÃO SOBRE O EP2



$S_i(x)$: RESTRIÇÃO DE S A $[x_{i-1}, x_i]$, $1 \leq i \leq n=6$

$S''_i(x)$: POLINÔMIO DE GRAU ≤ 1 , $x \in [x_{i-1}, x_i]$

$$S''_i(x) = \frac{x_i - x}{h_i} m_{i-1} + \frac{x - x_{i-1}}{h_i} m_i; \quad S''_{i+1}(x) = \frac{x_{i+1} - x}{h_{i+1}} m_i + \frac{x - x_i}{h_{i+1}} m_{i+1}$$

$$S''_i(x_i) = \frac{x_i - x_{i-1}}{h_i} m_i = \frac{h_i}{h_i} m_i = m_i \quad \updownarrow \quad 1 \leq i \leq n-1$$

$$S''_{i+1}(x_i) = \frac{x_{i+1} - x_i}{h_{i+1}} m_i = \frac{h_{i+1}}{h_{i+1}} m_i = m_i$$

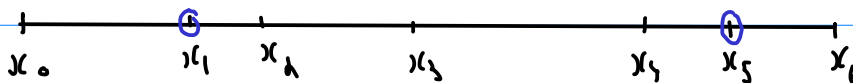
$$S(x_i) = y_i, \quad 0 \leq i \leq n \quad (\text{INTERPOLAÇÃO})$$

\Downarrow

$$S_i(x_{i-1}) = y_{i-1}; \quad S_i(x_i) = y_i, \quad 1 \leq i \leq n$$

$$\Rightarrow S \text{ CONTÍNUA} \quad (S_i(x_i) = S_{i+1}(x_i) = y_i, \quad 1 \leq i \leq n-1)$$

— / —
 " NOT A KNOT "



$$A = \begin{bmatrix} & & 0 \\ & & \\ 0 & & \end{bmatrix}$$

$$L = \begin{bmatrix} 1 & & 0 \\ & \dots & \\ 0 & & 1 \end{bmatrix}$$

$$U = \begin{bmatrix} & & \\ & & \\ & & \end{bmatrix}$$

TRIDIAGONAL "PERIÓDICO"

$$\begin{bmatrix} & & & \\ & & & \\ & & & \\ & & & \end{bmatrix}$$

a_{in}

*

*

a_{ni}