• Algorithmus

Berechnung $K^{(i)}, \underline{f}^{(i)}$ und Assemblierung zu $\hat{K}_h, \hat{\underline{f}}_h$:

```
Initiate: f̂_h := 0 , K̂_h := 0
FOR e := 1 STEP 1 UNTIL n DO
  FOR α := 1 STEP 1 UNTIL 2 DO
    BEGIN
      * compute f_α^(e);
      * determine i := i(e,α);        EZT
      * update f̂_i := f̂_i + f_α^(e);
      FOR β := 1 STEP 1 UNTIL 2 DO
        BEGIN
          * compute K_αβ^(e);
          * determine j := j(e,β);    EZT
          * update K̂_ij := K̂_ij + K_αβ^(e);
        END
      ENDFOR
    END
  ENDFOR
ENDFOR
```

$\Rightarrow \hat{\underline{f}}_h, \hat{K}_h$ (ohne RB !)

$f_\alpha^{(e)} := f(x_e - \frac{h}{2})\,\frac{h}{2}$, $\alpha = 1,2$;

$K_{11}^{(e)} := \frac{1}{h}$, $K_{12}^{(e)} := -\frac{1}{h}$

$K_{21}^{(e)} := -\frac{1}{h}$, $K_{22}^{(e)} := \frac{1}{h} := \lambda\left(\frac{x_{e-1}+x_e}{2}\right)\left[\varphi_e'\left(\frac{x_{e-1}+x_e}{2}\right)\right]^2 (x_e - x_{e-1})$

Bsp. $\quad 1 \qquad \left(\frac{1}{h}\right)^2 \qquad h$